The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 77, NO. 19 CHICAGO, ILLINOIS NOVEMBER 5, 1921

SOME CURRENT TRENDS IN ENDOCRINOLOGY *

R. G. HOSKINS, PH.D., M.D.
Professor of Physiology, Ohio State University College of Medicine
COLUMBUS, OHIO

The attempt to estimate the significance of endocrinology to present day medicine presents a difficult task. To one class of practitioners, endocrinology betokens a mass of extravagant absurdities on a par with phrenology or mesmerism. To another class it betokens a new gospel, the light of which is destined to guide medicine to glorious heights. The first class dismisses with a shrug the work of such men as Kocher, Minkowski, Biedl, Hammar, Schafer—to mention only a few of those to whom endocrinology is most indebted. The second class betrays a remarkable obliviousness to the history of fashions in medicine.

Both classes, the ultraconservative and the ultrasanguine, are exerting an influence detrimental to further progress. There is a crying need at the present time for careful students to take up and carry to successful completion a study of the numerous difficult problems with which the endocrinologist is confronted. Many of the problems can be studied best, or, indeed, only in the clinic. When in addition to the intrinsic difficulties of research in this field a young investigator has to meet the openly expressed contempt of men in high places, few but the most hardy—or foolhardy—are likely to venture in. The overenthusiastic class exerts an unfortunate influence largely by giving point to the strictures of the first mentioned group. In the long run their very extravagance will serve as its own antidote, but as a passing phenomenon their confident exploitation of systematized delusions is awakening false hope in the minds both of patients and of physicians. The conservative group would keep medicine pure and undefiled; but it should be realized that efforts aimed merely at purity have not infrequently, as their most significant end-result, sterility. The history of attempts to purify medicine by aloofness offers little encouragement.

The overenthusiastic group offer in justification of their imaginative daring and therapeutic rashness the plea that it is only by extensive experience that we can hope to learn either the possibilities or the limitations of endocrinology as a branch of practical medicine. In this they are, of course, occupying an impregnable position. But, as has been well said, to not a few men a hundred repetitions of the same blunder constitute "experience." Recklessly administering endocrine products to all sorts and conditions of patients, happily claiming as therapeutic triumphs all changes for the better and ignoring failures, is not likely to result in any very substantial progress. Some patients will be benefited; others, harmed; while many—judging from the vast amount of supposedly inert glandular débris administered—will be left precisely where they would have been if any other placebo had been similarly employed. Only one group stands to gain in any case, namely, the venders of the endocrine preparations.

As a matter of fact, so-called "practical" experimentation is precisely the method that has placed the history of therapeutics in the humorous literature of the ages. The long continued practice of phlebotomy or of mercurial purgation to the point of salivation in the face of most definite contraindications may serve to illustrate the point. Any number of absurdities have appeared, are appearing and will appear because men so readily believe that which they wish to believe. There is only one way to circumvent the post hoc fallacy, and that is to maintain adequate and rigid controls.

The crux of the whole situation lies precisely here. The mere fact that hundreds of physicians and thousands of patients have testified to having profited by the use of this or that endocrine preparation carries no conviction of its actual value to one who reflects that the pharmacopeias are filled with useless medicaments of which the same can be said. Reports of cures are convincing only when accompanied by adequate evidence that suggestion and other accessory therapeutic measures, as well as mere coincidence, have been ruled out as the determining factors. One would feel constrained to apologize for the mention of anything so obvious were not the literature filled with examples of violation of the principle mentioned. So long as practitioners fail to realize the essential requirements of scientific evidence and to educate their patients along this line, not only pseudo-endocrinology but also a multitude of other pseudoscientific cults will continue to flourish.

So much for the status quo. To one who approaches the subject with an open mind, it is obvious that endocrinology has contributed not a few valuable diagnostic and therapeutic procedures to practical medicine. There is no little real gold, however it may bulk in comparison with the amount of fool's gold that has been more or less honestly mined and minted. And it cannot be doubted that much more real gold remains to be secured both in the mines already worked and in those not yet found.

Of the current trends in the field of endocrinology, the most significant seems to be the sharp reaction that

* Read before the Columbus Academy of Medicine, Sept. 19, 1921.

has set in from the riot of extravagance and absurdity of the past two decades. Cushing [1] has recently voiced in a picturesque way the feeling that all conservatives must have regarding the so-called "impressionistic school." Other critics, some competent and constructive, some merely carping, are being heard in increasing numbers.

All well informed students of endocrinology realize the fact that reliable cartographers have as yet penetrated merely a few segments of the outer zone of the field. They have taken long range views of some further territory. But the detailed maps of the inner fastnesses that are engagingly offered, and by many eagerly received, are not in the end likely to prove more accurate than other maps drawn up in advance of actual careful exploration. The outstanding fact is that endocrine physiology is largely in a state of uncertainty, whereas the facile applied endocrinology with which we are so unfortunately familiar assumes a large body of substantiated fact.

Deductive reasoning, which is the mainstay of a considerable class of self-styled practical endocrinologists, can be productive only when the premises are sound. A few examples of more or less dubious premises in current vogue may be cited. We are glibly told of the "complex hormonic equilibrium" of the blood. However probable the existence of numerous circulating hormones, proof of their existence is almost completely lacking. "For all we know to the contrary, the ductless glands may function, in most cases, by subtraction rather than by addition," as was assumed in the earlier "detoxication" theories. No deduction stronger than antecedent probability can therefore be drawn in most cases from this assumption of circulating hormones.

Much is made by some writers of "hormonic antagonists." For example, if the suprarenal medulla is too ambitious, we can check its exuberance with pancreas extract. In this connection it is convenient to ignore the fact that such ambition is probably existent only as a brief emergency reaction, since any degree of epinephrin discharge producing significant pharmocodynamic effects anywhere in the body paralyzes the intestines. Moreover, according to practically all clean cut evidence, pancreatic extract as a source of hormone is inert. Altogether, the only definite evidence of pancreatic-suprarenal "antagonism" is that epinephrin is destroyed by alkaline pancreatic extract just as it is by soda solution. In short, the existence of hormonic antagonism remains yet to be proved, however fascinating it is to theorize about.

A fantastic theory that has had some currency is that the body cells have a capacity to select from a pluriglandular mixture any hormones they happen to need and to discard the rest. All the evidence is to the contrary. Both clinically and experimentally it is sufficiently plain that the law of mass action has not yet been repealed. If the blood is flooded with thyroid substance, for example, the subject dies of thyroid intoxication quite as would be expected. Many other guesses, masquerading as facts, could be cited, but let these suffice.

To deduce from the unfortunate existing situation, however, the conclusion, which certain shallow observers seem to have drawn, that the field of endocrinology itself is merely a mirage, is quite as crass a mistake as to accept as substance every flattering prospect the eye discerns. Difficult as is the actual exploration of this field, not a few well equipped parties are busy with pick and shovel as well as with chain and transit. A detailed review of their work would require much more space than is available, but a few of their more recent findings may be mentioned.

In case of the thyroid gland, the outstanding accomplishments of recent years are well known. Of these, the final isolation of thyroxin is no doubt the greatest. This illustrates, excellently, the cost of advancement in fundamental endocrine physiology. After a flash of light, many months of tireless effort and of baffling failure, and more than a ton of thyroid material were required for the final solution of the problem. The story is a medical epic. To Kendall, science is indebted for all time.

Of more immediate clinical interest is the work that has been done toward the diagnosis of thyroid disorders. Although the Goetsch test has been widely utilized, opinion as to its value still fluctuates. The essential fact is, of course, that a positive reaction indicates merely hyperirritability of the sympathetic system, from whatever cause. Thyroid intoxication, according to available evidence, is the commonest cause of this condition, but obviously sympathetic neuroses in general should give the same reaction. One group of investigators regards augmented basal metabolism as a more significant criterion. Since this indicates merely augmented oxidative reactions, it can hardly be more specific than the Goetsch test—in fact, on *a priori* grounds, it would seem even less conclusive. The complement fixation test is promising but is yet in the experimental stage. The hyperthyroidization test would seem to be well calculated to give valuable information, but potentially dangerous in augmenting the symptomatology of susceptible patients. Its use in borderline cases, however, for which the test was especially devised, should give rise to no significant difficulties. The test is, of course, ambiguous in that a positive reaction may mean either unusual susceptibility to thyroid in small amounts or a preexisting excess of circulating thyroid secretion. Bram has recently reported that in states of overactivity of the thyroid a remarkably high threshold to cinchonism appears. In practice, increasing doses of quinin up to tolerance or to 100 grains are administered and the degree of resistance thereby determined. In Bram's experience, this test has proved almost pathognomonic.

Plummer, especially, has repeatedly emphasized the unique influence of thyroxin as a general cell stimulant. It is altogether likely that much of the popularity of organotherapy depends, as Cushing intimates, on this influence. Thyroxin appears to be, therefore, the "tonic" *par excellence*. It would be a valuable contribution to determine more accurately and convincingly the indications for and limitations of thyroid merely as a nonspecific tonic. Numerous aspects of the problem are obvious. Offhand, one thinks of such conditions as slow healing of ulcers and fractures, depression psychoses, or gastro-intestinal atony. While there is no paucity of data bearing on the problem, they are in need of systematic organization.

It has been claimed, and with no little plausibility, that even the slowing down of cell metabolism incident to old age can be more or less prevented by the judicious use of thyroid. Interesting, in this connection, is the claim that under suitable conditions of dosage the anabolic as well as the catabolic processes

1. Cushing, Harvey: Disorders of the Pituitary Gland, J. A. M. A. 76: 1721 (June 18) 1921.

can be augmented by thyroid medication. Incidentally, the whole problem of the relation of the thyroid to senescence demands more extensive and more careful study. Thewliss states that the anatomic changes of old age do not in themselves account for the functional deterioration. The implication of this is that the tissues are capable of greater activity than they display.

The trend of the evidence of recent years regarding the thymus indicates that this organ should be deleted entirely from the endocrine congeries. The most convincing evidence with which I am familiar is that of Pappenheimer.[2] He found that rats, at least, survive in perfect health complete thymectomy. The work of this investigator has the distinction of being adequately controlled, the tissues of the experimental animals having been studied in serial section to demonstrate the completeness of the thymectomy. Of similar negative tenor is the careful work of Park and McClure[3] on dogs. Their own experimental work as well as their analysis of the literature suggest that the much quoted results reported by certain earlier investigators were due merely to poor kennel hygiene. Recent work on tadpoles, which are especially valuable subjects for this type of study, leads to the same negative conclusion. It would seem that whatever function the thymus may have is concerned with resistance to infection.

One of the fundamental hypophysis problems has been reopened by the work of Camus and Roussy,[4] Leschke,[5] Houssay[6] and Bailey and Bremer.[7] These observers have found that the classic symptoms of "hypophysial deficiency," i.e., diabetes insipidus, infantilism or dystrophia adiposogenitalis, can be produced experimentally by injuries in the juxtahypophysial region of the brain, which leave the hypophysis itself intact. It is quite possible, therefore, that even these manifestations of assumed hypophysial deficiency are merely "neighborhood symptoms." The burden of proof, however, is on the proponents of this view to show that the experimental procedures employed have not interfered with the functional integrity of the gland.

In the suprarenal field, perhaps the most interesting recent development is the rapprochement between those who accept and those who doubt the "emergency theory" of suprarenal physiology. The evidence that has been offered by Stewart and Rogoff that the suprarenals are under central control is practically tantamount to proof that they are subject to reflex influences, as Cannon believes. The technical point most recently at issue is whether or not acceleration of a denervated heart following emotional or sensory excitation is valid evidence of epinephrin discharge. Stewart and Rogoff have controverted this on the ground that, under some conditions, such acceleration can be recognized even after the suprarenal glands are disconnected from the circulation. Restudying the problem, Cannon and his collaborators[8] have found that from the liver of animals well fed on meat a substance is liberated when the hepatic nerves are irritated that stimulates the heart much as does epinephrin. With this factor ruled out, the acceleration can still be evoked, under "emergency" conditions. The acceleration can be accounted for, so far as is now determinable, only by discharge of epinephrin.

In the German literature there have recently appeared several articles on unilateral suprarenal extirpation in the treatment of epilepsy. A certain proportion of the patients have been reported as definitely cured or distinctly benefited. Whether the results have any more significance than that any new treatment of epilepsy is likely to result in temporary benefit remains to be seen. In the present state of our knowledge of suprarenal physiology it is to be hoped in any case that suprarenal extirpation as a therapeutic procedure will be restricted to localties where life is not worth living.

Of great fundamental significance is the work that has appeared of late years on the factors that modify the reaction to epinephrin. A given dose of this drug may send blood pressure up when initial pressure is low, and down when initial pressure is higher. Similarly, the hydrogen-ion content of the menstruum or the depth of the anesthesia can determine diametrically opposite reactions. Collip's observation[9] that in deep anesthesia only rise of pressure can be produced, accounts, perhaps, for the fact that the depressor influence of the drug was for many years disputed by various careful workers. In view of the tenacity with which the so-called tonus theory is still held by those who believe in clinical "hyper-" and "hypo-adrenalemia" (to use the current hybrid term) it may again be mentioned that when accessory conditions are kept normal, epinephrin in normal concentration in a normal subject causes fall of blood pressure.

The fact, and it is an uncontrovertible fact, that, with change of dosage, exactly opposite effects are produced, is highly significant. If the same reversal is true of other hormones than epinephrin, precisely the conflicting results that have been reported from the administration of active endocrine gland products are to be expected. This fact is another indication of the imperative necessity for rigid control in therapeutic experimentation in this field.

For purposes of this discussion, one other gland only may be mentioned, namely, the testicle. Despite the inevitable facetiousness of smart paragraphers on "monkey gland" therapy, the accumulated evidence demands serious consideration at the hands of conservative investigators. Steinach's method of rejuvenation by ligation of the vas deferens has been reported as successful in the hands of some, and as a failure in the hands of others. Perhaps Vecki's[10] suggestion explains the disparity of results. The rationale of the method apparently is the deflection of nutrition from the seminiferous to the endocrine elements of the gland. It is essential, therefore, that the vasectomy leave the circulation intact, an accomplishment not to be expected from mere careless "cutting and tying" technic.

Perhaps, at the present stage of progress, testicular grafting offers a preferable method because a more direct approach to the problem. That testicular grafts in dogs can be made to "take" and maintain their functional integrity for months has been shown experimentally by Wheelon and Shipley.[11] These

2. Pappenheimer, A. M.: J. Exper. Med. **19**: 319, 1914.
3. Park, E. A., and McClure, R. D.: Results of Thymus Extirpation in Dog, Am. J. Dis. Child. **18**: 317 (Nov.) 1919.
4. Camus, J., and Roussy, G.: Endocrinology **4**: 507 (Oct.-Dec.) 1920.
5. Leschke: Ztschr. f. klin. Med. **87**: 201, 1917.
6. Houssay, B. A.: Endocrinology **2**: 94 (April-June) 1918.
7. Bailey, P., and Bremer, F.: Unpublished report read before Association for Study of Internal Secretions, Boston, 1921.
8. Cannon, W. B., Uridil, J. E., and Griffith, F. R.: Unpublished report read before Association for Study of Internal Secretions, Boston, 1921.
9. Collip, J. B.: Am. J. Physiol. **55**: 450 (April) 1921.
10. Vecki, V. G.: Effect of Ligation of Vas Deferens on Testes, J. A. M. A. **77**: 880 (Sept. 10) 1921.
11. Wheelon, H., and Shipley, J. L.: Am. J Physiol. **39**: 394 (Feb.) 1916.

investigators have submitted graphic objective evidence from which all elements of suggestion were carefully excluded. The attempts, however, to implant whole testes into the normal intrascrotal position are indicative of a greater concern for cosmetic niceties than for sound surgery. Better results are to be expected if the ordinary principles of tissue grafting are observed. Perhaps Stanley's injection method may prove even simpler and better. Several indications for testicle grafting are obvious, such as surgical or spontaneous eunuchism or eunuchoidism, infantilism, and definite homosexuality. As Biedl has emphasized, however, clean cut favorable results are to be expected only in cases in which true hypogenitalism is the essential etiologic factor.

Although many failures have been encountered in the administration of testicular extracts, the subject is by no means closed. There is enough positive evidence on record to justify further studies along this line. Granting that the testicle produces a true hormone, the essential problems are how to secure and preserve it in sufficient concentration to be effective, in what dosage to use it, and how to administer it. Oral, intrarectal and parenteral routes should all be utilized in researches along this line.

Two other trends in endocrinology may be mentioned only in passing. Keith [12] has recently published some intriguing speculations regarding the endocrine glands as possible factors in anthropology. This particular piece of arm-chair endocrinology has had the effect of stimulating a group of investigators in China to a concerted study of the relation of the thyroid gland to normal mongolism. Several other fascinating problems along this line are suggested. Here again, however, careful investigation, not facile theorizing, is needed.

Closely akin to the foregoing problems in normal morphology are those suggested by Pende's term, "endocrinopathic constitutions." While the conception has been carried to fantastic lengths, evidence is slowly accumulating to substantiate the plausible *a priori* conclusion that endocrine anomalies play an important rôle in rendering the subject especially vulnerable to certain diseases, or bring about developmental deviations from the norm. The much derided dental signs of hypogenitalism, for example, are by no means intrinsically absurd. Otherwise stated, the fact is that the teeth may share in the morphologic expression of infantilism.

If the foregoing plea for conservatism seems to be in any sense destructive—if it is not 100 per cent. constructive—the aim of the paper has not been achieved. The end of the whole matter is this: Endocrinology is one of the most difficult fields of biology. The problems presented are fundamental and quite as fascinating as can be found in any field. In fact, their very fascination is in a measure unfortunate in its almost irresistible tendency to evoke the imaginative daring of those who are oblivious of Elliott's dictum: "Medicine owes no thanks to him who, without proof, would formulate her theories." Imagination has a legitimate function as a guide to research, but in this field at any rate, the exogenous variety is entirely superfluous. Those who do the work alone deserve the luxury; and great circumspection is expedient, even for these.

12. Keith, A.: Lancet **2**: 553 (Sept. 27) 1919.

There is no easy road in endocrinology, either to discovery or to knowledge already gleaned. On the other hand, it would be unfortunate to assume that none but supermen can hope to bring forth significant results. There are many problems demanding solution, which require, not genius, but merely accuracy and patience together with recognition of the ordinary criteria of evidence in any field. What is needed is more work, carefully planned and carried out, less shallow theorizing on the part of those dabbling with the problems, and the consistent but discriminating support of the medical profession.

ALCOHOLISM IN RELATION TO MENTAL DEPRESSION *

PIERRE JANET, M.D.
PARIS, FRANCE

(Translation)

Alcoholism is certainly one of the most baneful manifestations threatening our day and generation. In order to combat it, we must understand it. I beg therefore the privilege of presenting to you some reflections on the psychic state of alcoholics.

America appears to have taken a radical and decisive step toward the suppression of alcoholism by prohibiting the indiscriminate sale of alcohol. That is an excellent measure, but is it entirely adequate? Is it not likely that the wretched alcohol addicts, in an effort to procure their preferred poison, will, in their despair, wage a bitter fight against all prohibitory measures? And if they do not succeed in securing alcohol, will they not procure other poisons that exert an analogous effect? In order to give the needed support to legal measures; that is, in order to discover ways and means by which medical and moral forces may act on the underlying cause of alcoholism, it seems to me that we must study something else besides alcohol. In order that we may bring relief or effect a cure, we must study alcohol addicts themselves and learn the nature of the disorder that impels them to drink alcoholic beverages.

CHARACTERISTICS OF THE ALCOHOLIC

What constitutes a true alcoholic? You will understand, I am speaking from a psychologic standpoint and do not refer to physiologic defects. What disorder of actions and conduct characterizes an alcoholic? It is not sufficient to say that an alcoholic is a man who drinks alcoholic beverages, nor even to add that he partakes of such beverages in large quantities and often. We must not fail to distinguish between alcoholism and excess in drinking. An ordinary drunken man (*ivrogne*) is not an alcoholic. He may possibly become one, but he is not one yet. He does not present the moral defects of an alcoholic. He is not subject to the same accidents. He is not so dangerous for future generations. Drunkenness consists in a disorder of actions and idea-association, which is rapidly evoked by the absorption of alcohol. A drunken man is a person whose mental condition was normal but who, under the influence of alcohol, rapidly enters an abnormal state. Nothing of the kind takes

* Read before the Section on Nervous and Mental Diseases at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

place as regards the alcoholic. On the contrary, he does not become intoxicated. I recently observed the case of a man, aged 30, one of our soldiers, who on account of mental trouble had been sent back from the front and dismissed from the service. This young man told me, as he entered the room: "I just drank ten glasses of brandy before I came in to see you, so that I could talk to you clearly." He presented no disorders whatsoever, either of equilibrium, of speech or of idea-association, and I was obliged to tell him that he would have to come back again, when he had not been drinking, so that I could discover the nature of his disorder. Not only is it true that alcohol does not cause in alcoholics disorders of drunkenness, but it often suffices to cause the disorders present to disappear and to restore normal activity. A man of 30 happened to cover this point in an accidental remark: "It seems strange, but, just when I might expect to be getting intoxicated, I begin to feel normal. I then feel able to carry out my plans. My energy seems inexhaustible. . . . I can formulate a program and carry it out. Everything goes as if on wheels. . . . I can talk readily. My face wears a continual smile and I am affable with every one. Ordinarily, I am embarrassed and do not open my mouth, but now I scarcely know myself. . . . ." Another man speaks in a similar vein: "I am never really a sensible human being, conducting myself properly, except when I am under the influence of alcohol." This character is general and fundamental, and deserves to be well understood, for all alcoholics tell you, when you give them advice: "But I never become intoxicated. My mind is never so clear, and I can never work so well as after I have had my drink." This, then, is the first important characteristic. The alcoholic is an individual who needs alcohol in order to be normal.

If we draw the necessary conclusions from this observation, we are forced to admit, as I have often tried to show, that alcoholism is not an intoxication of an accidental nature, which will disappear and leave no traces if alcohol is suppressed. I have tried to show that we are dealing with an alteration of the mind—a mental disease—antecedent to the present absorption of alcohol and in one sense independent of alcohol.[1] This antecedent alteration explains the rôle that the absorption of alcohol plays and also the intense craving that alcoholics manifest for their particular form of poison.

In order to give a clear view of the problem, I have, in my previous works, presented the results of my inquiry into the mental state of a large number of alcoholics before they manifested their impulse to drink alcoholic beverages. I have examined into the circumstances under which the impulse developed and into the other troubles that developed at the same time, for it is a great mistake to regard this impulse as an isolated phenomenon. I have also sought to inquire into the effects on such patients of the absorption of alcohol and into the causes of the impulse itself.

The persons on whom we made our observations were members of families in which there were found a large number of nervous and mental diseases of every kind. Of 100 alcoholics on whom I made observations, I found that twenty-five were descendants of alcoholic parents; ten had parents that were or had been insane; twelve, parents gravely neuropathic, and ten, parents that presented arthritic and gouty symptoms.

Not all of these had been alcoholic all their life, but they had presented pathologic symptoms before they began to drink. If we inquire carefully into the matter, we shall discover that they gave evidence of many neuropathic symptoms before they acquired the drinking habit. In my series of 100 alcoholics, I noted in twenty-eight instances convulsive seizures of various kinds; in thirty-four cases, somnambulism and various symptoms of hysteria; in forty-one cases, obsessions, phobias and morbid impulses; in eighteen cases, pathologic fears, disturbed emotions, and mental depression of the melancholic type, and in twenty cases various visceral symptoms characteristic of neuropathic disorders. When exact information in regard to their past history can be secured, we find in alcoholics evidence of compulsory ideas expressed in the form of questions, abulia, and various signs indicating diminution of the powers of will and attention. That is the idea that we commonly express when we say, in speaking of those who become alcoholics, that they have a weak character. We must not allow this indulgent and commonplace remark to deceive us and prevent us from recognizing a truly pathologic condition.

In the majority of cases, the impulse to drink alcoholics began on a certain date that was connected in some way with some particular event in the person's life. It is easy to show that alcoholism begins under the same conditions as various forms of mental depression. I have seen persons who for years had easily resisted temptation, even though living in cabarets, but who became alcoholics as the result of an infectious disease—typhoid or a slight attack of tuberculosis. I have seen persons fall into the habit of alcoholism, just as one might sink into a state of depression, as the result of physical or mental overwork, a change of surroundings, a change of position, as the result of a rupture, disappointment in a love affair, etc. In the majority of cases of alcoholism, if we take time to investigate the origin, we shall find beginnings of this kind. That is the general rule, and there are fewer exceptions than we imagine.

In order to understand the onset of alcoholism after such untoward incidents in life, there is one very important fact that should be emphasized—a fact that is generally overlooked—and that is that the diseases mentioned, the overwork and the disturbed emotions do not give rise solely to the impulse to drink alcoholics. In fact, as a rule, they produce this impulse rather slowly, unless possibly the subject was predisposed to this impulse by previous attacks of alcoholism. Such conditions as I have just described give rise to a group of disorders of various kinds, sometimes analogous to previous neuropathic disorders, and sometimes presenting a new and distinct type such as the subject had never experienced before. These subjects all have, to a marked degree, sensations of want or incompleteness, which are distressing and are the result of mental depression—sensations of restlessness, ennui, emptiness, vagueness, dreaminess, fear, incapacity, false recognition, failure of interest disorientation, division of personality, distress, death, etc. "It is certainly

1. Obsessions et psychasténie **1**: 529, 1903; **2**: 423, 1903; L'alcoolisme et la dépression mentale, communication à l'Académie des sciences morales, Bulletin de l'Académie, September, October, 1915; Les médications psychologiques **3**: 344, 1920.

sad and shameful," remarked a woman of 33, "when one feels continually that there is nothing in life; nothing that makes life worth while; nothing that is worth the effort. I am astonished when I see persons weeping because they have been disappointed about something—to think that they should feel that it was worth while to weep." At the basis of such mental states we always find disorders of the will and powerlessness to act, especially in a social sense, which make up the essential character of their depression. Such subjects are incapable of the slightest effort and are horrified at the thought of the slightest action that they have to perform. This difficulty—this inability to act in a social sense—which finds its expression in the ordinary marks of timidity or rudeness, or in diverse kinds of disorders masking timidity, is one of the prominent characteristics of the majority of alcoholics. It is dependent on the weakness of the will, the reduction of the ability to act, and the mental depression that exists, in my opinion, in the great majoriy of alcoholics—however, not as a result of their intoxication, but before any intoxication occurred.

In these subjects we note another fact that is of particular interest for our present study, and that is that they present very often other impulses besides that which impels them to drink alcoholics. In a large number of alcoholics we find bulimia, erotomania, fugues, the impulse to wander aimlessly (which in one patient alternated with the alcoholic impulse properly so called), and kleptomania. One of these kleptomaniacs, especially, was a curious type. He robbed his employers and used the money to pay for the drinks taken in a cabaret with a group of chance acquaintances. He felt happy and consoled in the midst of the merry crowd, even though they were strangers to him. As I have already pointed out elsewhere, he was excited by the success of his theft and by the gratification to his pride that this rôle of a modern amphitryon afforded. All these secondary impulses are, to be sure, well known to us. They are impulses to exciting acts, commonly associated with morbid depression. To be sure, the mental depression of alcoholism is not always without relation to previous intoxication by alcohol, either on the part of the subject himself or on the part of his parents. As stated by Legrain, in his article on alcoholism, which was awarded a prize last year by the Académie des sciences morales, "Alcoholic decadence becomes hereditary in all persons, and it finds its expression in an impairment of the will—a sort of constitutional asthenic condition." That may be true in certain cases, but not in all. However, that does not do away with the important fact that, either as the result of a previous intoxication, or in some other manner, the alcoholic is suffering from a morbid depression analogous to that of the obsessed psychasthenic, or the patient afflicted with melancholia, and that this depression plays an essential rôle in his impulsive craving for alcohol. Lasègue once said: "It isn't everybody that can be an alcoholic." There must be a preexisting deficiency of mental activity, together with new excesses, which are the direct result of such deficiency.

DEVELOPMENT OF ALCOHOLISM

The absorption of alcohol has, indeed, a remarkable effect on alcoholics. It comforts and "cures" them for the time being. The verification of this statement, as shown by our observations, is an easy matter. All the neuropathic accidents that we have noted in alcoholics disappear following the absorption of alcohol. Here is the central point of the whole question: alcoholism in its entirety is the result of the fact which we have already demonstrated and which is corroborated by our recent observations; namely, that alcohol does not act on a normal person in the same manner as it does on a person in a state of mental depression. It takes the former from a state of normalcy and plunges him rapidly into a state of drunkenness, whereas, it takes the latter from a state of inertia and impotence and returns him to a normal state. To be sure, every person in a state of mental depression who becomes normal through the use of alcohol is not necessarily an alcoholic, but he is on the road toward alcoholism. He has only a few steps to go. He should take account of the fact that the distressing sensations of want or incompleteness, the necessary accompaniments of mental depression, are transformed by alcohol and that he longs for this transformation. All that is needed is that he shall discover or imagine that alcohol alone has this power, that nothing can take the place of it, and he will have an irresistible craving for alcohol. A patient, a woman of 33 and a confirmed alcoholic, gave expression to her fateful passion in these glowing terms: "Alcohol keeps me from being stupid; it gives me the ability to act. When I have had a drink, I am no longer sad, weak, without hope. I feel like another person and I have the ambition to live instead of dreaming of death. . . . Alcohol gives a value to things, for it is unbearable not to be interested in anything. . . . When I drink I feel that I am alive, I am conscious of my personality, and I like to live and to know that I am alive. . . . What would you have me do? If I drink it is to drive away the shadows, for it is the gloom that comes over me first that impels me to drink. . . ."

The question arises as to the nature of the mechanism that produces this strange stimulation. In this connection, I have put forward an hypothesis in regard to the rôle of poisons, which is analogous to our conception of the part played by sudden and great dangers in mobilizing the forces of the nervous system. "We may assume that, at the start, the introduction of a poison into the organism puts all functions on guard and brings about, as in the beginning of a war, the mobilization of all the forces of the organism, whereby the general activity is increased and the mental tension is raised. But if the ingestion of poison continues in increasing doses, if the war lasts too long, the reserves of the organism become exhausted, intoxication sets in, the system is invaded, and mental depression becomes such that nothing can suppress it." These hypothetic interpretations of facts as yet so imperfectly analyzed may possibly furnish us a mental picture which will bring the mechanism of the physiologic stimulations by poisons into a certain relationship with our previous interpretation of the mechanism of psychic stimulations by simple actions lying in the past, and which will, at the same time, help us to understand that the stimulations have their limits that it is dangerous to exceed.

From these observations is becomes evident that alcoholism develops when two conditions are concomitant: (1) when this subject, as the result of con-

stitutional inferiority, or accidentally, owing to overwork or great emotion, has fallen into a state of mental depression, and (2) when the subject has experienced the stimulating effect of alcohol and has discovered that his craving desire for stimulation finds its complete satisfaction in alcohol. The mode of onset was characteristically shown by various observations. U——, a man of 35, had had for some time his phobias for bridges, for water and for death, when, in order to console him over the death of a brother, his companions induced him to "take a glass." It was then that he discovered for the first time that after drinking a few glasses he became a jolly good fellow. The same thing happens over and over again. An especially frank illustration of this mode of onset is given by an observation previously published. A foreign physician around the age of 40, who had reached the last stage of alcoholic intoxication, recounted to me the beginnings of his terrible passion for alcohol: "From my early youth, I was subject to a distressing disorder. From time to time—every year or every two years—I would sink into a profound state of sadness. For several months, I was unable to do anything, say anything, and worst of all, to decide anything. The slightest action required an untold, I may say, an unmerciful effort; but more especially, I suffered frightful mental torture on account of an awful sentiment of disgust with myself —a feeling of moral shame. I had a delusion that I had become a wretch and that I polluted every place I went. You cannot imagine what a person suffers under such circumstances. I had tried in vain all sorts of treatment, when one day a crowd of students called for me just as I was having one of my worst attacks and carried me off to a university banquet. They dragged me along and made me drink almost in spite of myself. The result was extraordinary. After having drunk an enormous amount of alcoholics, I felt no signs of intoxication, but on the contrary, perceived that I was becoming more and more normal. The veil, as it were, that enveloped my head was rent. It seemed to me that I was born anew, that I was beginning a new life. I could talk and act as of old, and my sensation of happiness was as exaggerated as my sentiment of shame had been. I returned home without any trouble. I could eat a full meal and sleep soundly, which I had not been able to do for a long time, and I awoke 'cured.' What could you expect? When my horrible state of sadness returned a few days later, I sought again the remedy—at first, from motives of curiosity, but later, with frenzy, and since that time I have not been able to stop."[2] It would be easy to report not only a few but fifty or more observations on the same order. This type of evolution I have encountered in connection with various impulses—the impulse to the opium or morphin habit, even the impulse to theft and to sensual debauch, but especially in the development of the impulse to drink.

Alcoholism will be more or less grave and will take on different forms according as to whether the subject is able to resist his craving or whether he is induced to yield to it in a more or less resistless fashion. In the beginning and for a certain length of time, he will not resort to his remedy except on particular occasions. Alcoholics drink constantly, as they admit, "when they feel the need of something to brace them up"; that is, when the circumstances demand that the psychic tension shall rise to the level of the efforts. To this extent, alcoholism is not determinative but depends on the circumstances in which the individual is placed. It is with alcoholism as it is with all impulses affecting persons in a state of depression—it decreases if the subject leads a simple, easy life, but increases when the actions required by the situation are more strenuous and of a more elevated character. I will give an observation as an illustration of this point: An honest workman, a tailor, who was married and the father of a family, never drank a drop. By dint of economy he was able to save up enough money to establish himself in a tailoring business of his own, in which he employed several workmen. From this time on, he began to drink; drank more and more, until finally he was plunged into a very serious type of alcoholism. What was the reason for this? As his wife explains it and as he himself well knows, it was because he now had customers to receive, business plans to work out and large sums to pay. He is embarrassed, timid and restless, and he is unable to attend to his business affairs until he has his alcohol. The change in his position and the load of responsibility were too much for his weak mind; he became depressed and therefore an alcoholic, merely because he had undertaken something that was too difficult for his weak intellect. But if the conditions can be changed; if life can become more easy, and particularly, if the mental depression decreases, the subject soon ceases to drink alcoholics.

Unfortunately, if the alcoholic is left to himself, he does not ordinarily remain very long in the stage in which alcohol is a remedy. He soon reaches the second stage in which alcohol has become a food. He is impelled to drink more and more violently. He cannot stop with doses such as might be needed to brace him up a little. He cannot resist resorting to alcohol in periods in which it is not indispensable. Several psychologic causes intervene and influence the evolution, all of which bear a relation to the disorder of the will occurring in psychasthenics. Certain manias intervene—a mania for continuation, for repetition: a mania for going to extremes: "If I stop drinking before I am fully under the influence of alcohol, it seems to me that I have not finished—that something is wanting and that I must start in again. . . ." "I am always an extremist; I always have to go to extremes with everything." The fear of a relapse—of suffering again from mental depression—increases continually. D——, a woman of 33, always has the feeling, when under the influence of alcohol, that she will lapse into a state of depression if she stops drinking, "and the horror of that awful gloom throws me into a state of despair. I prefer to continue in spite of everything. I haven't the strength of will to stop." If we recollect that alcohol rescues alcoholics from terrible suffering, we shall understand that it involves for them temptations that a normal person does not feel. The patient whom I just quoted made a statement, bearing on this point, which makes one smile. "You do not know the most terrible mental anguish a human being can suffer." "What is that?" I asked. "To have before you a bottle of whisky from which you have already taken a nip, and let something happen that prevents you from finishing it." That is why she drinks when she becomes agitated about some-

2. Obsessions et psychasténie **2**: 424, 1903.

thing and is afraid of a relapse of mental depression. "As soon as I suffer any emotional excitement and mental depression sets in again, I am obliged to drink continually." The principal cause of the development of this impulse lies in the continuation and aggravation of the mental depression, which gradually breaks down the will power. The subject becomes less and less able to break the habit, to expose himself to suffering, and, at the same time, he becomes more and more impotent; finds himself powerless to execute various acts of more and more importance, and feels much more frequently the need "of something to brace him up."

Finally, the impulse becomes more and more fixed, more and more an integral part of his mental make-up, until it becomes quite irresistible in extreme cases of dipsomania, which are not so distinctly different from those I have described as is commonly supposed.

I have already come to recognize that impulses which impel the individual to seek stimulation are much more powerful than the obsessive impulses of the scrupulous—than their so-called criminal impulses, for example. We must also recognize the fact that, in certain cases, the impulse to stimulation by alcohol seems irresistible, for it suppresses even individual consciousness and memory and is yielded to while the patient is in a state bordering on automatism (*état second*). Throughout the dipsomaniac fugues of R——, a man aged 37, and also of Maria, the subjects were in a state of automatism. The patient does not recover normal consciousness until toward the end of his fugue, and has no personal recollections of what happened except for the last few days. While all patients do not reach such an extreme condition, many have, during the attack, very little consciousness of their personal identity. Their one thought is, to drink, and no other consideration appears within their conscious mind to contend against this impulse. Again, when they have begun to drink, they manifest none of the scruples such as we observed in the case of the preceding alcoholics. They are not stopped by any consideration. They will deprive themselves of anything they possess; will sell even the clothes they have on their person or will pawn family belongings—in fact, they will sacrifice their most precious possessions in order to procure an alcoholic beverage. After their attack is over, they have no comprehension of what they have done. One woman stated: "I know very well that my husband and my children will leave me if I go on like this. I really do love them—they are more to me than my own life. How is it I never think of them a single moment when I am drinking?" Hack Tuke tells the story of a man who had voluntarily entered for treatment a certain sanatorium at which patients received only water to drink. One day he noticed that the physician in charge gave a glass of liquor to one of the patients who had been seriously wounded. Without hesitation, he took a hatchet and cut off one of his hands that he might have the right to demand a glass of liquor. This old story may serve as an illustration to show that this craving for alcohol may become irresistible—without the realm of reflection. This manifestation may be explained by an aggravation of preceding disorders: mental depression, unendurable feelings of incompleteness, diminution of will-power and automatism. It may be observed that, in addition to this, phenomena occur, suggesting the confusion, the narrowing of the mental field of vision and the susceptibility to suggestion commonly found in cases of hysteria, and it should be noted that intoxication may occasion phenomena of this kind. I have stated elsewhere that certain alcoholics, under the toxic influence of alcohol, present a mental state analogous to that of patients with hysteria. It is possible that chronic alcoholic intoxication entered in and complicated the primary mental depression and added new disorders. Persons such as D——, a woman aged 33, felt at first (in connection with a slight emotion), the simple need of a glass of liquor as a stimulant; but at the end of several years they become subject to a severe attack of dipsomania if the slightest thing goes wrong. It is well to distinguish this new form of the disease from the preceding by designating it dipsomania or alcoholomania, but it must be considered simply as a later stage of the preceding. It must also be remembered that fundamentally all these impulses are of the same kind, and that they all have a common starting point in that the subjects seek alcoholic stimulation in order to escape mental depression.

TREATMENT

In order to combat the development of alcoholism, we must study certain accessory causes in addition to the craving for stimulation found in those who are mentally depressed. We must dispel the widespread and dangerous belief that alcohol nourishes and fortifies the system; that it enlivens the mind and gives one courage. As M. Legrain has said: "All kinds of virtues have been attributed to alcohol. If the subject wishes to forget, alcohol is known to have a stupefying effect. If he desires pleasure, he recalls the sensation of euphoria during the beginning stage of drunkenness. If he wishes enthusiasm, he recollects the rapid flow of ideas when the mind is no longer held in check by the reason. If sadness is desired, it will be remembered that wine often induces tears. Alcohol is present at all festal occasions and at all occasions for mourning."

I may mention still the absurd theory that alcohol possesses a certain ethnic value, so to speak; that it is wine that gives to the French their character. All that is profundly absurd: a substance that kills and at the same time costs a big price is a sad kind of food. A potion that takes away the sense of fatigue, stupefies and deprives one of all one's ambition, is a deplorable stimulant. It is not wine that produced French character any more than it is the fig of the desert that made Arabs what they are or rice the Japanese. Racial character has roots more profound and more complex than those that can be imputed solely to the alimentary regimen.

But along with the campaign that must be waged to uproot these false theories, the essential concern of the hygienist and physician should be the study of the general mental depression that today is so widespread. Infectious diseases, intoxications, alcoholism of parents (which constitutes a genuine vicious circle), misery, insanitary dwellings, poorly prepared food and factory life—all that no doubt plays an important part. I have already had occasion to point out in this connection a type of mental overwork that is typical of the age in which we live. The philosophic ideas in regard to the equality of men have brought to a common level the ambitions of all classes. They have subjected all minds, no matter what the caliber, to efforts that our fathers never thought of making in the same

V. 7 1921

manner. A dramatic author once said: "Several generations are required to make a minister out of a janitor's son." We have said so often to the janitor's son that he might become a minister that he has tried to skip the "several generations." You cannot imagine how many medical observations I can produce on this subject, whereby I have been filled with concern in regard to the effects of endeavoring to educate certain types of individuals beyond their natural capacity. I cannot pause to discuss at length this very delicate question, material for which presents itself on every hand during the course of my observations of pathologic cases. I can only refer to it briefly. Formerly, minds that could not stand a heavy tension accepted beliefs already made and easy to assimilate. But nowadays, and, as it would appear, without reason, we say again and again that everybody ought to have the right to reason out his own beliefs and not be expected to accept as true anything but what seemed to him to be proved. That would seem to be perfectly just and right. We may say, That is merely applying to life the method of Descartes. But here is the problem: Have all the young boys and girls the brain of Descartes? Please note that it is not a question of condemning or regretting the progress of democracy and the freedom of thought. It is great progress that the human mind has been making in France, and it is possible that we have in this respect made more rapid and more thorough progress than the other nations. I wish merely to state that our progress has been arduous and costly, and that our people are paying for it in overwork and mental depression.

Diminution of alcoholism is primarily the work of the hygienist and the mental specialist. Those who have devoted themselves to the work of supplying workmen's cottages; who are seeking to give to families healthful places of abode, with plenty of fresh air in their rooms, are doing more than one would at first imagine for the cure of mental depression and of alcoholism. Those who endeavor to assure workingmen, and more especially working women (who are certainly in need of it), a good, substantial diet at a reasonable price have made an important contribution toward the suppression of alcohol. But in addition to the physical side of public health improvement, shall we not some day study into the mental hygiene of our people? If we could make the social struggle less severe; if we could check the desire to attain social position too rapidly, and if we could discourage dangerous ambitions, could we not unite what now seem irreconcilable: freedom of thought and tranquility of beliefs? These are great questions and more closely linked to the problem of alcoholism, and also that of race suicide, than is commonly supposed.

As for the physician, he should not be concerned solely with the disintoxication of the patient. He should not occupy himself merely with the problem of alcohol but should consider also the alcoholic who created the alcohol problem and who will substitute some equivalent dose if alcohol is suppressed. He should take an active interest in the disorder of depression which called forth the craving for the poison before the intoxication took place and which will bring back the same craving after disintoxication, no matter how complete it may be, has taken place.

Aside from certain special care which their state of intoxication demands, the treatment of dipsomaniacs and toxicomaniacs coincides in reality with the treatment of impulses toward stimulation, of which we have just spoken. We must combat the exclusiveness of the impulse. We must seek various other sources of stimulation. We must make the patient perceive that there are stimuli of a mental nature, just as there are physiologic stimuli. We should try to lessen the craving for stimulation by decreasing the depression, by raising the psychic tension through every means possible, etc. These are the difficult problems, into the various possible solutions of which I have been studying. Patient D——, mentioned above, was hypnotizable. As the result of an esthesiogenic hypnotic séance she could feel the same stimulation as that produced by alcohol. She was a woman who needed to be directed by others and whose mental output diminished when she felt that she could count on outside support. Within three months it proved possible to relieve her of an alcoholic impulse that had persisted for years. In other cases, methods of repose, a simpler mode of living, or stimulation through work accomplished good results. The treatment of toxicomaniacs presents no special problems other than those of the treatment for intoxication by a given poison. It brings us back to the ordinary difficulties of treatment of neuropaths suffering from mental depression.

The problem of alcoholism is a problem of general medicine; it seems to raise only problems relative to intoxication and disintoxication. It may not be inapt to repeat, what has so often been remarked before, that all problems of medicine are interrelated and that the study of alcoholism cannot be undertaken with profit if it is not connected up with the study of neuropathic and psychic disorders.

ABSTRACT OF DISCUSSION

DR. TOM WILLIAMS, Washington, D. C.: Dr. Janet's thesis is one we do not think of enough with reference to the alcohol problem, namely, that often a man is an alcoholic because of a particular difficulty he has in adapting himself to the realities of life. Dr. Janet has emphasized the factor of heredity. These individuals are fated to be inferior; they are unable to adapt themselves on the occasion of some particular event in their life; yet we are beginning to realize that we can do much to educate them to adjust themselves to the conditions of life. When we cannot do that, we can recommend a change of environment which will fit their particular constitutional weakness. There is another fact with regard to legislation in this country regarding alcohol. We think more of the alcohol and less of the alcoholized man, and Dr. Janet brought out the comparison between the "jolly drinker" and the alcoholic who is so miserable when he does not drink. He draws a distinction between those men. But we must remember that if the constitutionally inferior person cannot get alcohol or morphin he may find some other means for uplifting himself. I have found the determining factor has been the accessibility of alcohol. Every facility has been given toward directing their effort to feel better by taking a drink, and if the present legislation in this country is successful, that temptation at least will be removed. We should remember the factor of the psyche in this important social problem which Dr. Janet has presented so well and with which I heartily agree.

Infectious Origin of Dementia Praecox.—Cases of dementia praecox, of confusional insanity or of delirium, of pseudotumor, and of various other mental conditions have pathologic changes which are similar. It is quite apropos to assume that certain cases of dementia praecox are due to infectious or toxic processes.—H. I. Gosline, *Bull. Mass. Dept. Ment. Dis.* **4**:105 (Oct.) 1920.

PHYSICAL CHARACTERS AND ENZYMATIC ACTIVITIES OF DUODENAL CONTENTS

FINDINGS DURING GASTRIC DIGESTION IN NORMAL YOUNG MEN *

C. W. McCLURE, M.D.
A. S. WETMORE
AND
LAWRENCE REYNOLDS, M.D.
BOSTON

The present communication gives the main results of an investigation of the physical characters and enzymatic activities of the duodenal contents during gastric digestion in normal young men. For the purposes of this work the duodenal contents were obtained by means of the Rehfuss gastroduodenal tube. The tube was passed at a time when the stomachs were in the fasting state. After the tip of the tube had reached the second portion of the duodenum, as determined by fluoroscopy, an attempt was made to aspirate whatever contents might be present in the duodenum; the subjects then were fed one of five types of meals. These meals consisted of: (1) 300 c.c. of a mixture of milk, water and cottage cheese; (2) 300 c.c. of 20 per cent. cream; (3) 300 c.c. of 0.5 per cent. cooked cornstarch solution in which were dissolved 15 gm. of lactose, and (4) 300 c.c. of tap water. To each meal was added 40 gm. of barium sulphate. A fifth type of meal consisted of 40 c.c. of 20 per cent. cream and 10 gm. of barium sulphate. The presence of the barium salt permitted the behavior of the meals in the stomach and duodenum to be observed by means of the fluoroscope.

After the subject had ingested one of these meals, he reclined on his right side and a small amount of duodenal contents was aspirated with a syringe, following which the contents of the duodenum were siphoned off. Siphonage did not give a uniform flow but the contents came in jets from the tube, at intervals varying from a few seconds to a minute or more, with more or less dripping from the end of the tube between jets. The amounts obtained during the period of collection were never less than several hundred cubic centimeters. The period of collection varied from two to four hours, depending on how rapidly the stomach emptied itself. The latter was found to vary with the type of meal fed. In general, water left the stomach in from one to one and one-half hours, the starch and lactose solution in from one and and one-half to two and one-half hours, the milk and cottage cheese mixture in from three to three and one-half hours and the 300 c.c. cream meal in from four to five hours, while the 40 c.c. cream meal left the stomach in about one hour's time.

Duodenal contents collected after feeding the water meal were greenish yellow during the first hour and light golden yellow during the second hour. The specimens of the first hour were but slightly viscid, and those of the second hour somewhat more so. The contents obtained from the starch and lactose meal were yellowish brown during the first hour of collection, while the subsequent specimens were golden yellow or pale yellow. The contents obtained from this meal were somewhat more viscid than those obtained from the water meal. The material returned through the duodenal tube after the ingestion of the milk, water and cottage cheese meal was deep golden yellow and more viscid than any of the duodenal contents previously described. The duodenal contents collected after feeding the 300 c.c. cream meal were deep golden yellow with the exception of the first two hourly collections in one subject, which were greenish yellow. The duodenal contents collected after feeding the 40 c.c. cream meal were greenish yellow during the first hour and lemon yellow during the second hour. The contents from both cream meals were very much more viscid than those collected from any other type of meal, while in one subject the contents were almost semisolid in consistency. Therefore, the duodenal contents obtained, after feeding the various types of meals, all contained bile, showed rather characteristic degrees of viscosity, varied in color and were usually very largely liquid, containing but a very small amount of the food originally fed. The finding of the differences in viscosity and color suggests that the character of the fluids entering the duodenum is in some way dependent on the kind of food ingested.

Before beginning the study of the enzymatic activities of duodenal contents it was deemed expedient to devise methods which would conform to the basic principles of the physical chemistry of enzyme action. This was necessary because in all previous methods [1] used for the estimation of enzymatic activities in duodenal contents many conditions which profoundly influence uniformity, proportionality and stability of enzyme action are not considered. Uniformity of enzyme action means that, under a certain set of experimental conditions, a given specimen of duodenal contents will give the same results on repeated analyses. By proportionality is meant the relation existing between the amounts of material digested by varying quantities of duodenal contents; i. e., two units of duodenal contents should digest about twice as much material as does one unit. Stability of an enzyme is a term used to express the length of time an enzyme will remain active. Obviously, methods which neglect such important factors as these give results whose interpretation is problematic.

The methods we have devised obviate the sources of error present in those previously described. This has been accomplished by the use of mixtures of disodium phosphate and potassium acid phosphate solutions, whereby the degree of alkalinity (hydrogen ion concentration) necessary to bring about uniformity and proportionality of enzyme action has been obtained. In these methods proteolytic activity is estimated by allowing duodenal contents to act on a solution of soluble casein. The amount of digestion which occurs is estimated by an adaptation of the method of Folin and Wu [2] for the determination of nonprotein nitrogen developed. Amylolytic activity is estimated by the action of duodenal contents on starch solution. The amount of sugar thus developed is determined by the method of Folin and Wu [3] for the determination of sugar in the blood. Lipolytic activity is estimated by the action of duodenal contents on a true emulsion of cottonseed oil, and is represented as the number of

* From the Medical Clinic and Radiographic Department of the Peter Bent Brigham Hospital.
* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Euler, H.: General Chemistry of the Enzymes, translated by T. H. Pope, New York, 1912.
2. Folin, Otto, and Wu, H.: J. Biol. Chem. 38: 81 (May) 1919.
3. Folin, Otto, and Wu, H.: J. Biol. Chem. 41: 367 (March) 1920.

cubic centimeters of tenth normal sodium hydroxid necessary to neutralize the acidity developed.[4]

Figures representative of the degrees of enzymatic activities found in duodenal contents obtained in twenty-five experiments after the ingestion of the various meals, together with those of the hydrogen ion concentrations, are given in the accompanying table.

Study of the table shows that in the hourly specimens of duodenal contents derived from the milk and cottage cheese and the cream meals there were sufficiently uniform degrees of enzymatic activities to permit the estimation of average figures for the degree of each type of enzyme action. For this reason the results obtained by the use of these meals have been used as a standard.

For practical purposes the use of the meals of 300 c.c. volume offered several difficulties, such as nonpalatability, too large bulk to be easily ingested, and too great dilution of the duodenal contents when the stomach emptied itself with abnormal rapidity. Such dilution produced abnormally low degrees of enzymatic activities in the duodenal contents. For this reason it was deemed advisable to make a study for the purpose of finding a meal which would obviate these difficulties; and the 40 c.c. cream meal was finally decided on as the most suitable. Duodenal contents collected during the first hour after the ingestion of this meal show enzymatic activities comparable to those outlined in the table.

ENZYMATIC ACTIVITIES AND HYDROGEN ION CONCENTRATION OF DUODENAL CONTENTS COLLECTED FROM VARIOUS TYPES OF MEALS

	Proteolytic Activity Expressed in Mg. Nonprotein Nitrogen in Specimens Collected During				Lipolytic Activity Expressed in C.c. of N/10 NaOH in Specimens Collected During				Amylolytic Activity Expressed in Mg. of Glucose in Specimens Collected During				P_H of Specimens Collected During				
Subject	First Hour	Second Hour	Third Hour	Fourth Hour	First Hour	Second Hour	Third Hour	Fourth Hour	First Hour	Second Hour	Third Hour	Fourth Hour	First Hour	Second Hour	Third Hour	Fourth Hour	Type of Meal Ingested by the Subject
B	3.0*	....	....	....	1.8*	....	....	....	1.3*	....	....	....	....	....	....	....	Milk, water and cottage cheese
	3.4*	....	....	....	2.0*	....	....	....	1.6*								
	1.7*	....	....	....	0.6*				0.7*								
	3.6*	4.2	5.2	5.2	1.6*	2.4	1.7	1.2	1.5*	1.1	1.6	2.3	....	6.4	7.1	7.0	
D	3.9	2.7	3.1	3.7	2.0	1.0	1.8	1.6	1.7	0.8	1.8	1.0	5.1	4.5	....	4.0	
J	3.4	3.0	3.0	3.5	3.0	2.3	2.8	2.2	1.9	1.9	2.4	2.4	5.1	6.1	6.8	6.2	300 c.c. 20% cream
L	3.9	....	....	....	2.8	....	....	....	2.0	....	....	....	6.3	....	....	....	40 c.c. 20% cream
E	2.3	3.0	4.8	....	1.4	1.6	2.6	....	0.3	0.4	1.7	....	....	....	....	....	Starch and lactose
D	2.1	3.5	....	....	0.2	0.2	....	....	0.4	1.9	....	....	....	....	....	....	Water
I	1.8	....	....	....	0.5	....	....	....	0.3	....	....	....	....	....	....	....	Fasting duodenum

* Specimen collected over a period of fifteen minutes.

Duodenal contents derived from the fasting duodenum or from the water meals and in specimens collected over periods of only fifteen minutes showed degrees of enzymatic activities considerably below this standard. Similar results were also obtained occasionally in duodenal contents derived from the starch and lactose meals. These findings suggest the existence of some relation between the kind of foods eaten and the degrees of enzyme action in duodenal contents.

The degree of acidity, i. e., the hydrogen ion concentration, of the duodenal contents derived from the various types of meals was determined by means of a potentiometer. The hydrogen ion concentrations were found to vary between 5 and 7.5, with, however, an occasional exception between 4 and 5. These findings are similar to those of McClendon and his co-workers.[5] No relation was found between the degrees of enzymatic activities and the hydrogen ion concentrations. This observation, together with the finding of variations in the degrees of enzymatic activities in relation to the type of materials ingested, suggests that food plays a more important rôle in the production of the presence of enzyme action in the duodenum than does the degree of acidity. This finding supports Pawlow's contention in contradistinction to that of the "secretin theory" of Bayliss and Starling.[6] It will be recalled that the latter theory assumes secretin to be a product of the action of hydrochloric acid on the duodenal mucosa and to function as the stimulant to pancreatic secretion. On the other hand, Pawlow[7] believed he proved, in dogs, that food substances controlled the secretion of pancreatic enzymes.

Enzymatic activities have been determined in the hourly specimens of duodenal contents derived from fifteen normal young men, after the ingestion of milk and cottage cheese or one of the cream meals. On the basis of this number of observations the normal minimum for enzymatic activity, as determined under the experimental conditions outlined, is considered to be, for proteolytic activity, 2 mg. of nonprotein nitrogen; for lipolytic activity, 1 c.c. of tenth normal sodium hydroxid, and for amylolytic activity in the neighborhood of 1 mg. of glucose.

4. Detailed description of the technic of these methods will be found in the Archives of Internal Medicine **27**: 706 (June) 1921.
5. McClendon, J. F., and Myers, F. J.: J. Biol. Chem. **41**: 187 (Feb.) 1920. McClendon, J. F.; Bissell, F. S.; Lowe, E. R., and Meyer, P. F.: Hydrogen-Ion Concentration of the Contents of the Small Intestine, J. A. M. A. **75**: 1638 (Dec. 11) 1920.
6. Bayliss, W. M., and Starling, E. H.: J. Physiol. **28**: 325, 1902.
7. Pawlow, I. P.: The Work of the Digestive Glands, London, 1910.

FRACTIONAL ANALYSIS OF THE DUODENAL CONTENTS IN NORMAL INDIVIDUALS

SOME OBSERVATIONS *

JULIUS FRIEDENWALD, M.D.
AND
JOSEPH SINDLER, M.D.
BALTIMORE

The value of fractional analysis of the gastric contents in the diagnosis of disturbances of the stomach is well recognized. It is an established fact that the results of analyses of stomach contents obtained an hour after an ordinary Ewald test breakfast are often notably inadequate, and that the results of such examinations may even lead to erroneous conclusions. As the passage of the duodenal tube can now be practiced with but little difficulty and the contents obtained for purposes of examination, it is important to avoid draw-

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

ing incorrect conclusions in duodenal analysis, as is frequently done following a single gastric analysis. On this account Einhorn[1] has called attention to the value of fractional analyses of the duodenal contents. Before one, however, can draw conclusions regarding pathologic states, the normal should be definitely settled. Einhorn has given us the curves of the fractional analysis of the duodenal secretion in two perfectly normal individuals, who were in no way affected with any subjective symptoms. In his other examinations the individuals had definite disturbances, and the results therefore which were obtained cannot be classified under the head of normal curves. With these facts in view we have examined the duodenal contents in ten perfectly normal individuals with the object that these findings may serve as a basis for the future study of pathologic variations.

In most of our examinations the duodenal tube was swallowed in the morning in the fasting state and fractional analyses were made of the gastric contents first, utilizing 300 c.c. of strained oatmeal broth as a test meal. After the completion of this process, the tube was allowed to enter the duodenum, which can usually be accomplished within a half hour. Formerly in order to have the tube enter into the duodenum it was necessary to pass it at night, when it ordinarily found its way into the duodenum on the following morning. It is quite unnecessary, however, to pursue this long procedure. As a rule, if the tube is passed in the morning in the fasting state, it can usually be made to enter the duodenum in from twenty to forty minutes. In order to accomplish this process quickly, the method as advised by Lyon should be followed.

FRACTIONAL ANALYSIS OF DUODENAL CONTENTS

No.	Name	Gastric Contents: Fractional Analysis	Date and Time	Appearance	Alkalinity	Amylopsin	Steapsin	Trypsin
1	Mrs. B. S.	Minutes: Fasting 15 30 45 60 75 80; FA 0 0 14 15 54 30; TA 13 16 34 18 62 42	March 6, 1920					
			Fasting	Golden yellow	70	6.5	5	4
			½ h.a.b.*	Lemon yellow	45	6	4.5	2
			1 h.a.b.	Lemon yellow	60	0	6	2
			1½ h.a.b.	Lemon yellow	0	0	2.5	4
			2 h.a.b.	Golden yellow	10	0	5	4
2	Dr. L. R.	Minutes: Fasting 15 30 45 60 75 90 105 120; FA 0 0 0 0 14 17 26 22; TA 10 12 17 22 28 35 42 32	April 11, 1920					
			Fasting	Golden yellow	31	2	2.5	1
			½ h.a.b.	Golden yellow	Alk.	4	2	3
			1 h.a.b.	Golden yellow	40	2	2	3
			1½ h.a.b.	Golden yellow	20	2.5	2	4.5
			2 h.a.b.	Golden yellow	35	10	2	2.5
3	W. S.	Free HCl plus	April 12, 1920					
			Fasting	Golden yellow	30	7	5	2
			½ h.a.b.	Golden yellow	Acid	5	0	2
			1 h.a.b.	Golden yellow	20	5	2	3
			1½ h.a.b.	Orange yellow	25	3	4	0
			2 h.a.b.	Orange yellow	30	0	2.5	2
4	B. W.	Minutes: 15 30 45 60 75 90 105 120; FA 0 0 10 22 30 35 30 25; TA 5 15 18 20 30 50 55 50	March 28, 1920					
			No bouillon					
			½ hour	Golden yellow; turbid	20	7	1	3.5
			1 hour	Golden yellow; clear	20	6.6	1	1
			1½ hour	Golden yellow; clear	30	2.5	3.5	2
			2 hour	Golden yellow; clear	20	12	1	0
5	J. T.	Minutes: 15 30 45 60 75 90 105 120; FA 0 0 15 32 38 30 25 25; TA 5 28 36 40 44 55 54 50	March 28, 1920					
			No bouillon					
			½ hour	Golden yellow; clear	10	3	4	4
			1 hour	Golden yellow; clear	50	3	2	2.5
			1½ hour	Golden brown	Neut.	12	2	2
			2 hour	Golden yellow	60	8	5	6
6	D. B.	Minutes: 15 30 45 60 75 90 105 120; FA 0 10 26 30 30 35 42 ..; TA 20 23 34 30 51 45 60 ..	April 18, 1920					
			Fasting	Light golden yellow	12	6	3	0
			½ h.a.b.	Golden yellow	12	8	2.5	1
			1 h.a.b.	Flaky golden yellow	12	7	3	0
			1½ h.a.b.	Flaky golden yellow	10	6	2	4
			2 h.a.b.	Clear golden yellow	20	10	5	1
7	D. B.	Minutes: 15 30 45 60; FA 25 26 45 41; TA 33 47 55 58	May 25, 1920					
			Fasting	Clear golden yellow	20	8	4	3
			½ h.a.b.	Clear golden brown	15	6	5	3
			1 h.a.b.	Golden yellow	20	6	2.5	2
			1½ h.a.b.	Golden yellow	40	4	2.5	3.5
			2 h.a.b.	Golden brown	10	1	2.5	4
8	C. S.	Minutes: 15 30 45 60 75 90 105; FA 0 0 22 38 36 44 42; TA 10 30 32 45 56 54 50	April 15, 1920					
			Fasting	Clear golden yellow	30	15	8	8
			½ h.a.b.	Cloudy golden yellow	—	6	2	5
			1 h.a.b.	Clear golden yellow	20	7	3.5	5
			1½ h.a.b.	Clear golden yellow	20	2	0	5
			2 h.a.b.	Clear golden brown	30	1	0	3
9	M. B.		March 2, 1920					
			Fasting	Golden yellow; turbid	30	5	5	3
			½ h.a.b.	Golden yellow	10	3	2	2
			1 h.a.b.	Lemon yellow	15	6	2	2
			1½ h.a.b.	Lemon yellow	Neut.	8	4	2
			2 h.a.b.	Lemon yellow	20	6	4	2.5
10	D. B.	Minutes: 15 30 45 60 75 90 105 120; FA 0 0 18 20 40 45 42 25; TA 5 15 30 45 52 60 54 50	April 4, 1920					
			Fasting	Golden yellow	60	8	12	5
			½ h.a.b.	Turbid golden yellow	30	7	3	12
			1 h.a.b.	Clear golden yellow	40	6	6	4
			1½ h.a.b.	Clear golden yellow	30	6	5	4
			2 h.a.b.	Clear golden yellow	33	8	7	4

* Hours after bouillon; FA, free hydrochloric acid; TA, total acidity.

The tube is swallowed to the 55 cm. mark. A small glass of water is given to increase peristalsis, and the patient, then lying on his right side, is required to make slow swallowing movements which gradually induce the passage of the tube to the 75 cm. mark. As Lyon points out, and our observations are entirely in accord with his, the slow swallowing movement is often the secret of the rapid entrance of the tube into the duodenum. In order to determine whether the tube has entered the duodenum, one need only aspirate, when at first usually a light golden yellowish fluid appears. At times the contents may be slightly amber in color, and turbid or golden brown. The secretion is usually alkaline, though rarely it may be neutral or even slightly acid in reaction.

1. Einhorn, Max: Am. J. M. Sc. 156:817 (Dec.) 1918; The Duodenal Tube, p. 46.

From 15 to 20 c.c. of contents is now slowly aspirated and placed aside in a beaker. Following this procedure, a test meal of beef bouillon is given according to the plan of Einhorn, consisting of one bouillon cube to a cup of hot water. This process stimulates the flow of the secretion. The duodenal contents are now aspirated at half hour intervals for at least two hours, from 15 to 20 c.c. being obtained at each aspiration. If the secretion is abundant in the fasting state, it may not become necessary to stimulate with a test meal, as under such conditions the flow is frequently quite sufficient for the various examinations. The specimens obtained should be promptly examined, since they are likely to undergo rapid disintegration on standing. With each aspiration, the reaction, color and consistency of the contents are noted and the degree of alkalinity is determined by titrating with tenth normal hydrochloric acid solution, methyl-orange solution being utilized as an indicator. The examination for the ferments is practiced according to the method of Einhorn[2] with his special agar tubes, the preparation of which has been fully described in his various papers.

The mode of procedure is as follows:

A starch, oil and hemoglobin tube is taken, the paraffin at one end scraped off, and the tube placed vertically in a small test tube containing the duodenal secretion. A few drops of toluene are added, after which the test tube should not be shaken, and the contents are kept at the body temperature for twenty-four hours in an incubator. The agar tubes are next removed from the test tube by means of a hemostat, and the surface is wiped off and inspected. "The hemoglobin tube shows a change of appearance (due to the action of the trypsin and a clearing up of the end part), becoming more or less transparent; the oil tube manifests a bluish appearance (the steapsin ferment splits the oil into fatty acids producing this color) at the end. The lengths of transparency in the hemoglobin tube and of the bluish color in the oil tube are measured and stated in millimeters. The starch tube is further examined by pushing out the agar column and dipping it into a weak iodin solution. The portion of the starch column remaining colorless indicates the part changed (by the amylopsin ferment) into sugar and is given in millimeter lengths."

According to this method of Einhorn, the hemoglobin determines the quantity of the trypsin ferment, the olive oil the steapsin, and the starch the amylopsin.

In the study of our ten normal individuals, the duodenal contents were first examined in the fasting state and then again at half hour intervals according to the method described above. The accompanying table presents the fractional analyses of the duodenal contents, its appearance, the degree of alkalinity and the quantities of amylopsin, steapsin and trypsin as estimated in millimeters of digested portions of the agar columns. As a matter for comparison, the fractional analyses of the gastric contents are given in most instances. The duodenal contents consist of pancreatic secretion, bile and duodenal secretion. Under normal conditions, this secretion, according to our observations, is golden yellow or brown in appearance; is alkaline and free of odor, but changes its appearance and odor on standing for a few hours. According to the observations of Einhorn, when three or four teaspoonfuls of glycerin are taken daily the duodenal contents will not decompose for two or three days. A similar effect may be produced when glycerin is directly added to the contents. The alkalinity varies between 15 and 40; the quantity of ferment: (1) amylopsin, from 1 to 15 mm.; (2) steapsin, 1 to 12 mm., and (3) trypsin, 1 to 12 mm., varying with the time of extraction. Under normal conditions the alkalinity is usually highest in the fasting state, decreases immediately after the test meal, and then gradually rises.

Similarly, the ferments are usually at their height in the fasting state and fall to their lowest level immediately after the test meal has been administered and then gradually increase; this condition, however, is not constant. The strength of one ferment is independent of the other, so that any change in amount of one is not ordinarily accompanied by a similar change in the other, each running its independent curve. The average of the amount of amylopsin observed is 2.29 mm.; of steapsin, 3.5, and of trypsin, 5.8. Finally, no apparent relation exists between the curve of gastric acidity and duodenal alkalinity.

CONCLUSIONS

From our observations on the fractional analyses of the duodenal contents in the ten normal individuals, we feel justified in concluding that this method of examination presents a simple means of determining quantitatively the degree of alkalinity as well as the quantity of ferments present for several hours after the stimulation of the duodenal contents by means of a test meal. The degree of alkalinity is usually highest in the fasting state, and falls immediately after the test meal is given and then gradually rises; it bears no relation to the curve of gastric acidity. A similar effect is observed usually in regard to the ferments the strength of one ferment being wholly independent of the other. Finally, these findings, obtained under normal conditions, appear sufficiently definite to serve as a basis for further study of pathologic changes in the duodenal contents.

2. Einhorn, Max: Tr. Am. Gastro-Enterological A., 1912; M. Rec., Jan. 15, 1910; Tr. Am. Gastro-Enterological A., 1915, p. 79; The Duodenal Tube, p. 42.

FRACTIONAL EXAMINATION OF THE DUODENAL CONTENTS IN PEPTIC ULCER

OBSERVATIONS IN FORTY CASES *

MAX EINHORN, M.D.
Professor of Medicine, New York Medical School; Attending Physician, Lenox Hill Hospital
NEW YORK

In a previous paper[1] it was shown that in normal individuals and in a great many patients the duodenal contents are ordinarily alkaline at any time after a bouillon test meal or in the fasting condition.

As the duodenum is the next door neighbor to and in constant communication with the stomach—an organ which manufactures and at considerable lengths of time daily contains a free inorganic acid—the mechanism of neutralizing and alkalizing the inflowing stream must be very subtle and important.

It appeared of importance to ascertain whether this essential function of the duodenum, of neutralizing the acid chyme, remains unaltered in organic affections

* From the Lenox Hill Hospital.
* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Einhorn, Max: The Fractional Examination of the Duodenal Contents, Am. J. M. Sc. 156:817 (Dec.) 1918.

of the stomach and duodenum. We selected for our investigation peptic ulcers because they are usually accompanied by higher acidities of the gastric juice than the normal, thus making the task of neutralizing harder, and on account of the probable influence the lesions are apt to exert on the duodenal function.

Altogether, forty cases of peptic ulcers were examined as regards their duodenal contents with the fractional method after a bouillon test by the stomach. The method of procedure was as follows:

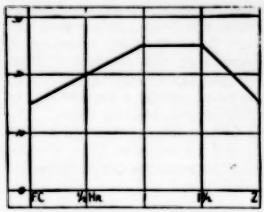


Chart 1.—Reaction of duodenal contents after a bouillon test meal in Case 1; acidity of gastric contents, — 40.

With the duodenal tube in place (i. e., in the duodenum), the fasting contents were aspirated and examined. Then a test meal of bouillon (one bouillon cube Armour & Co. to one cup of hot water) was given by the mouth, and aspiration of the duodenal contents performed every half hour, until two hours, after the test meal. In each case an examination of the gastric contents after the usual test breakfast of Ewald and Boas had been undertaken a few days in advance, in order to acquaint us with the gastric secretory function. The diagnosis of peptic ulcer had been established in all cases by the clinical symptoms and the string test, and in the majority also by positive roentgen-ray findings indicative of ulcer.

All cases are given in the table containing the acidity of the gastric juice and the fractional examinations of the duodenal contents.

It appeared appropriate to group the cases according to the location of the ulcer into gastric, pyloric and duodenal ulcers, and to range them in the table according to their gastric secretory function, beginning with the low acidity and progressing accordingly. As all the forty cases showed the presence of free hydrochloric acid in the gastric contents one hour after the test breakfast, we simplified the table by stating merely the figures of the total acidity, omitting the free hydrochloric acid amount, which for the stomach was on an average 20 less than the total acid. In the duodenal contents, likewise, we gave the figures of alkalinity or total acidity, not mentioning the free hydrochloric acid, which here, ordinarily, averaged about 10 less than the total acidity.

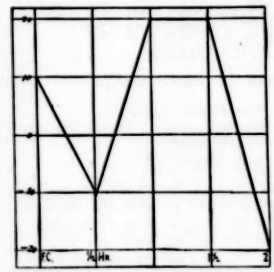


Chart 2.—Reaction in Case 9; acidity of gastric contents, — 80.

Among the forty cases of peptic ulcer whose duodenal contents were examined, there were sixteen patients showing at times an acid state in the duodenum, either in the fasting condition or at one time or another during the fractional examinations after the bouillon. Two of these revealed a steady acidity of the duodenal contents in the entire period of the fractional examination after the bouillon. In twenty-four patients the duodenal contents were always alkaline in the fasting state as well as at all times during the fractional examinations after the bouillon test meal.

NEW CASES OF PEPTIC ULCER IN WHICH FRACTIONAL EXAMINATIONS OF THE DUODENAL CONTENTS HAVE BEEN MADE (OCTOBER, 1920, TO MAY, 1921)

					Examination of Duodenal Contents				
						After Bouillon			
Name	Date	Diagnosis		Gastric Contents	Fasting	½ Hr.	1 Hr.	1½ Hrs.	2 Hrs.
1. J. L. R.	1/15/21	Gastric ulcer	Acid	40					
			Alk.		15	20	25	25	15
2. Mrs. S. S.	1/30/21	Gastric ulcer; cholelithiasis	Acid	50					
			Alk.		20	20	25	20	20
3. Mrs. J. V.	11/25/20	Gastric ulcer	Acid	60	..	..	..	10	15
			Alk.		25	10	15		
4. Miss E. W.	2/ 2/21	Gastric ulcer	Acid	60					
			Alk.		10	10	20	15	20
5. Miss F. R.	4/27/21	Gastric ulcer	Acid	65					
			Alk.		15	20	25	20	20
6. K.	4/19/21	Gastric ulcer	Acid	70					
			Alk.		15	20	30	30	20
7. R. A. A.	10/26/20	Gastric ulcer	Acid	70	40	..	..	..	25
			Alk.		..	20	25	25	
8. Mrs. S. L.	1/20/21	Gastric ulcer	Acid	70					
			Alk.		15	20	20	20	15
9. Miss E. T. E.	12/15/20	Gastric ulcer	Acid	80	..	10	..	..	20
			Alk.		10	..	20	20	
10. Mrs. W. A. H.	3/ 1/21	Gastric ulcer; probable cholecystitis	Acid	80					
			Alk.		15	20	20	25	10
11. Dr. J. de G.	3/11/21	Pyloric ulcer	Acid	55					
			Alk.		20	30	15	20	20
12. Wm. R.	2/16/21	Pyloric ulcer; cholecystitis ?	Acid	60					
			Alk.		15	15	20	20	15
13. Mr. McC.	5/ 3/21	Prepyloric ulcer	Acid	60	10	35	50	30	15
14. Mr. M. B.	3/ 9/21	Pyloric ulcer	Acid	65					
			Alk.		20	25	25	20	10
15. Dr. F. A.	10/19/20	Pyloric ulcer	Acid	70	..	..	10		
			Alk.		25	20	..	15	15
16. L. S.	3/22/21	Pyloric ulcer; cholecystitis	Acid	70					
			Alk.		10	20	25	20	20
17. D. R.	3/ 1/21	Pyloric ulcer	Acid	75	..	10	..	10	
			Alk.		20		15	..	15
18. H. T.	2/16/21	Pyloric ulcer	Acid	80	..	..	..	20	
			Alk.		10	20	20	..	20
19. C. C. M.	12/11/20	Pyloric ulcer	Acid	80					
			Alk.		15	20	25	20	20
20. J. D.	2/17/21	Pyloric ulcer	Acid	80					
			Alk.		10	15	20	20	20
21. I. B.	11/23/20	Pyloric ulcer	Acid	120	15	15	10	15	10
22. J. F. B.	12/16/21	Duodenal ulcer	Acid	40					
			Alk.		20	15	25	20	20
23. W. D. B.	3/15/21	Duodenal ulcer	Acid	40					
			Alk.		15	20	25	25	20
24. Mrs. R.	12/14/20	Duodenal ulcer	Acid	60					
			Alk.		35	25	20	20	20
25. Mrs. J. L. B.	3/ 8/21	Duodenal ulcer	Acid	60	..	20	20	10	
			Alk.		20	..	..	..	10
26. Mrs. L. H.	5/ 4/21	Duodenal ulcer	Acid	60					
			Alk.		10	20	15	20	20
27. H. P.	3/ 2/21	Duodenal ulcer	Acid	65					
			Alk.		15	20	25	20	25
28. J. G. B.	3/ 2/21	Duodenal ulcer; chronic cholecystitis	Acid	70					
			Alk.		15	25	20	20	20
29. U. E.	3/26/21	Duodenal ulcer; chronic cholecystitis	Acid	70					
			Alk.		20	20	25	15	15
30. S. F.	5/ 3/21	Duodenal ulcer	Acid	70	10	..	..	10	
			Alk.		..	15	20		
31. N. O. J.	12/ 3/20	Duodenal ulcer	Acid	75	..	..	20	15	15
			Alk.		20	10			
32. H. R. H.	11/29/21	Duodenal ulcer; chronic cholecystitis	Acid	80	15	..	..	30	40
			Alk.		..	10	15		
33. H. K.	11/25/20	Duodenal ulcer	Acid	80	..	10			
			Alk.		15	..	20	20	
34. W. P. W.	11/20/20	Duodenal ulcer	Acid	80					
			Alk.		20	30	25	20	15
35. M. B.	4/19/21	Duodenal ulcer	Acid	80					
			Alk.		25	25	35	30	20
36. E. C. D.	3/17/21	Duodenal ulcer	Acid	80					
			Alk.		20	25	25	30	20
37. H. C.	4/ 7/21	Duodenal ulcer	Acid	100	..	..	..	20	
			Alk.		15	15	20	..	15
38. J. G. R.	3/21/21	Duodenal ulcer; chronic cholecystitis	Acid	100	30				
			Alk.		..	10	10	20	15
39. H. A.	4/27/21	Duodenal ulcer	Acid	100					
			Alk.		20	25	25	25	20
40. W. H. S.	10/10/20	Duodenal ulcer; chronic cholecystitis	Acid	112	N	10	10		
			Alk.		20	..	..	15	15

In dividing the entire class of peptic ulcers into those involving the stomach, pylorus and duodenum, the following may be noted:

Among ten cases of gastric ulcer the duodenal contents were at times acid after the bouillon test in three, while they were always alkaline in seven.

In all pyloric ulcers the duodenal contents after the bouillon test meal were always acid in two, at times acid in three, and always alkaline in six.

In nineteen cases of duodenal ulcer the duodenal contents after the bouillon meal were at times acid in eight, while they were always alkaline in eleven.

The degree of acidity of the gastric contents does not seem to be the determining factor for the occurrence of acidity in the duodenal contents. Case 13, for instance, with an acidity of the gastric juice of 60, shows a permanent acidity of the duodenal contents after the bouillon, while Case 20, with an acidity of the gastric juice of 80, shows an alkaline reaction of the duodenal contents in all the examinations. It is well known that the high acidity of the gastric juice will probably favor the occurrence of acidity in the duodenal contents. Cases 21 and 40 are good illustrations of this fact: Case 21 revealed an acidity of the gastric juice of 120, and the duodenal contents were acid at all times after the bouillon; Case 40, likewise, showed a gastric juice of 112 total acid and the duodenal contents were acid at times after the bouillon test meal.

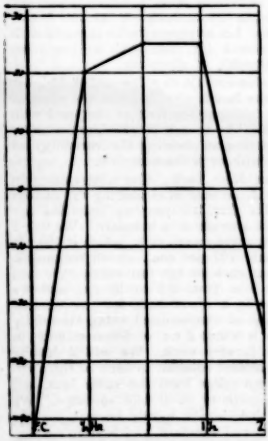


Chart 3.—Reaction in Case 7; acidity of gastric contents, — 70.

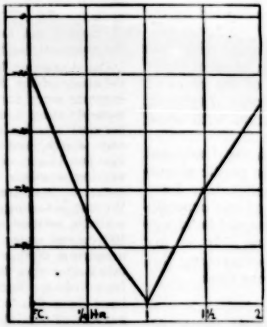


Chart 4.—Rection in Case 13; acidity of gastric contents,— 60.

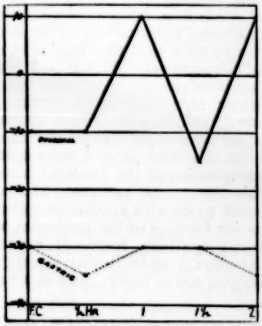


Chart 5.—Reaction in Case 13 after treatment; simultaneous gastric and duodenal examinations.

In looking over the table with regard to the examinations of the duodenal contents in the fasting state and after the bouillon in peptic ulcers, we can discern the following four types:

Type I (Case 1). The duodenal contents are always alkaline in the fasting state as well as at any time after the bouillon test meal.

Type II (Case 9). The duodenal contents are alkaline in the fasting state and at times acid after the bouillon test meal.

Type III (Case 7). The duodenal contents are acid in the fasting condition and at certain periods after the bouillon test meal.

Type IV (Case 13). The duodenal contents are always acid in the fasting state as well as at any time after the bouillon test meal.

Type I represents the normal. The majority of cases of peptic ulcer (twenty-four in forty) show a normal condition with regard to the alkalinity of the duodenal contents. In a number of peptic ulcers (sixteen in forty) the abnormal types (II, III and IV) were found. The severity of the disturbance is least in Type II, greater in Type III, and greatest in Type IV.

Type IV we encountered in two cases of pyloric ulcer (Cases 13 and 21). It is hardly necessary to say that in these particular instances we made sure by all kinds of tests that the tube was in the duodenum while the duodenal contents were obtained. It is in this way proved that under adverse conditions the duodenal contents can be acid at all times (fasting and during the period of digestion).

This is of importance, for, generally, in ascertaining the position of the tube, the conclusion is made that acid contents come from the stomach and indicate that the tube has not left this organ. It is therefore necessary to apply the milk or raspberry or coffee test before deciding this point definitely.

It is evident from what has been stated above that the greatest disharmony in the neutralization faculty of the duodenal contents (namely, their being acid at all times) can exist in cases of peptic ulcer. In the table we find two cases of pyloric ulcer with completely disturbed function of the neutralization power of the duodenum.

The question arises as to how these cases act after a treatment applied for the cure of the ulcer. We had occasion to examine one of these two patients (Case 13), two days after a two weeks' period of duodenal alimentation. We used in this case the gastroduodenal aspirator in order to be able to compare the gastric acidity cycle with the duodenal reaction curve.

This simultaneous examination of the duodenal contents revealed:

DUODENAL CONTENTS

Fasting: Greenish yellow, turbid; ACl = 5; Ac.= 10; 8 c.c.

After bouillon 30 minutes: Watery, clear; HCl = 5; Ac.= 10; 7 c.c.

After bouillon 60 minutes: Dark yellow, turbid; alk.= 10; 4 c.c.

After bouillon 90 minutes: Grayish, tinge of yellow; turbid; HCl = 5; Ac.= 15; 5 c.c.

After bouillon 120 minutes: Light yellow, slightly turbid; alk.=10; 5 c.c.

GASTRIC CONTENTS

Fasting: Grayish, turbid; HCl=20; Ac.=30; 10 c.c.
After bouillon 30 minutes: Grayish, turbid; HCl=25; Ac.=35; 2 c.c.
After bouillon 60 minutes: Grayish turbid; HCl=15; Ac.=30; 6 c.c.
After bouillon 90 minutes: Grayish, turbid; HCl=15; Ac.=30; 5 c.c.
After bouillon 120 minutes: Grayish, turbid; HCl=25; Ac.=35; 6 c.c.

It can easily be seen that after treatment the neutralizing power of the duodenum has improved considerably in this case. If we compare Chart 4, which gives the reaction curve in the duodenal contents after a bouillon test meal in the same patient before treatment, with Chart 5, after treatment, it is evident that the duodenum now acts much better. Twice we find the contents in the last examination alkaline, and even when acid the degree of acidity is much less than before the treatment.

It will be advisable to examine a greater number of these cases of disharmony of the duodenal neutralization function before and after treatment.

Aside from the physiologic interest presented by the fractional examinations of the duodenal contents after the bouillon test, they may be useful in the diagnosis of peptic ulcers. Although an acid state even at times has been encountered in less than half of the cases of peptic ulcer, this is nevertheless of some diagnostic import and can be utilized in conjunction with some other signs suggestive of this affection.

In this short paper I have dealt with the fractional examination of the duodenal contents in peptic ulcers. Diseases of the pancreas, liver and gallbladder have much to do with possible disturbances of the neutralization function of the duodenum, which could be recognized by these fractional examinations. It is my intention to make further investigations regarding this subject and to report them at some future time.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MCCLURE, WETMORE AND REYNOLDS, FRIEDENWALD AND SINDLER, AND EINHORN

DR. I. O. PALEFSKI, New York: Dr. McClure has well emphasized the necessity of improvement in the technic of enzymology of duodenal contents. It appears from recent studies that little attention was given to the fact that duodenal juice is essentially an indefinite admixture of several secretions, each endowed with accelerating or retarding influences on enzyme activity. I agree with Dr. McClure regarding the use of cottonseed oil emulsion for the examination of lipase. The chemical and physiologic changes caused by the use of barium sulphate and the time required for the determination of the end-products of digestion of starch and casein are the drawbacks in the method suggested by Dr. McClure. Bile colored, acid duodenal contents may be obtained normally when the tip of the tube is still at the pylorus or in the first part of the duodenum; in common bile duct obstruction and in partially obstructed pylorus or duodenum by ulcer, adhesions, growth, or by external pressure. The tube, then, may remain at the point of obstruction for many hours. In twenty cases, including one pyloric and six duodenal ulcers examined by the beef bouillon meal as advocated by Dr. Einhorn, the duodenal juice was alkaline in sixteen, and showed free hydrochloric acid in two and combined acid in two others. In the two free acid cases, the tip of the tube was located by the roentgen ray at the point of obstruction by ulcer. There was a tendency toward a higher alkalinity of the duodenal juice on the empty stomach. The fractional examination of the gastric contents after the beef bouillon meal revealed the latter to have passed out of the unobstructed stomach within an hour, while in pyloric and duodenal ulcer, it remained over two hours. Its gastric stimulating effect was distinctly less than by the Ewald meal. While passing into the duodenum, the tube stimulates gastric and probably also pancreatic secretion. If further stimulation by test meals is deemed necessary, the duodenal contents should be examined immediately after the former has entirely passed out of the stomach. Experience has shown that during gastric digestion, the duodenal juice is weakest in pancreatic enzymes, owing to dilution and destruction by the excessive acid gastric contents.

DR. CLEMENT R. JONES, Pittsburgh: We must guard against drawing conclusions as to the total duodenal contents from small samples obtained at points not settled with exactness and not including the whole mass. As 10 c.c. of gastric contents does not always represent the average acid and ferment contents of the stomach, we may conclude that a small amount of duodenal content represents only the contents at the point at which the tip of the tube may be at the time of securing the sample. Food and secretions move rapidly through the duodenum, and with our present methods we are only beginning to study the problem. Let us proceed with care and with no preconceived ideas search for such truth as improving procedures may make possible of discovery.

DR. J. D. DUNHAM, Columbus, Ohio: There has been considerable discussion in the last few years about the effect of barium and bismuth on the emptying time as compared with ordinary meals. I should like to ask Dr. McClure whether he carried out any experiments showing the variability of the enzymatic activities with or without barium.

DR. ANTHONY BASSLER, New York: Our observations in the study of the duodenal contents in estimating the various enzymes were so variable that last year we simplified our method, using a diastatic enzyme as a standard. We use 2 per cent. standardized Japanese starch cells, which is 100 per cent. starch, and the only 100 per cent. starch obtainable. We put 15 c.c. of it into each of ten test tubes. We add varying amounts of B bile, from 0.2 to 10 c.c., and we immerse these ten tubes in a water bath for ten minutes. We use a testing solution of standardized iodin, essentially a Gram solution, which is about 2 c.c. of Gram solution in 100 c.c. of water, so it is very weak. We add a definite proportion of this standardized solution to each of these ten tubes after they have been taken from the water bath, and from this we know the activity of B bile specimen. We have done this on 100 individuals, mostly normal, for the purpose of obtaining a normal standard, and have found that the diastatic activity of the pancreas seems to be more staple, more definite than the other enzymes. We have found from 0.7 to 0.9 c.c. of B bile representing about the normal standard of pancreatic activity. It is a simple method. It has served us much more satisfactorily than the other methods of testing the proteolytic enzymes.

DR. FRANKLIN W. WHITE, Boston: I wish to emphasize two points in connection with these papers. First, the value of the study of the enzymes in normal persons. Without it we have no basis and guide for our pathologic studies. This work that Drs. McClure and Friedenwald have done is of real importance. Any one who has studied duodenal contents realizes the great variability and inconstancy of tests for ferment. In Dr. McClure's method we have here a real advance in detecting the amount of ferments present. It is a method which will give us constant quantitative results in ferment estimation, which is not true of other methods which I know. The next point is the passage of the duodenal tube. The duodenal tube to the general practitioner looks like a difficult instrument to insert. Our recent observations show that it is easy to get in, as a rule. Our record of the last 100 cases watched by the fluoroscope showed that the tube passed into the duodenum within from twenty to thirty minutes in 80 per cent. of cases. After the tube has reached the stomach, it can be easily passed into the duodenum by putting the patient in the right Sims position and having him swallow the tube slowly for six or eight more inches.

DR. MARTIN E. REHFUSS, Philadelphia: A physician studying duodenal contents in our laboratory noted that as far as

the enzymes were concerned in duodenal activity it was possible to obtain bile from almost all. He questioned whether complete modification of the lipase took place in normal duodenal contents in the ordinary laboratory procedure. Regarding duodenal contents in normal blood, some of you have seen normal duodenal contents in achylia. We examined six normal students. In five out of the six we got bacterial contents. In four out of six we got colon bacillus and in one streptococcus. When I was in Canada Dr. Beaupré told me that he covered the tube with paraffin and then introduced it until it went into the duodenum. Then he took a syringe and withdrew the contents. He got the first contents, which are as nearly sterile as possible. In 100 cases he never failed to get the contents. This is a simple method and rather an ingenious one.

DR. CHARLES W. MCCLURE, Boston: The results were the very best we could get under existing conditions. No attempt has been made to duplicate conditions in the small intestine. I know of no way in which we can duplicate conditions present in the small intestine and maintain uniformity of enzyme action. One reason why lack of uniformity of enzyme activity is not always obvious when estimated by the old methods is that the procedures for quantitatively determining the degrees of enzyme action were too rough to show any more than the very grossest differences. Bile from human gallbladders obtained at operation, when added to duodenal contents, had no effect on the degree of enzyme action as determined by the methods we have devised. Duodenal contents derived from a patient with complete obstruction of the common duct, and in whom no bile was being secreted, showed degrees of enzymatic activity comparable to those obtained from normal men. The main object has been to devise experimental conditions under which uniform degrees of activity would be obtained for each type of enzyme, proteolytic, lipolytic and amylolytic. We have then attempted to find out whether the uniformity in results was the effect of a poor method or whether it was the apparent effect. We have then determined whether the uniformity obtained was the result of imperfect methods or whether it represented the true enzymatic action in the duodenal contents. By using various types of meals and repeating over and over again on the same subjects—and all of these were normal young men without any gastro-intestinal trouble—we have shown that we can get a low enzymatic action and a high enzymatic action by varying certain sets of conditions, and that the degrees of enzyme action remain constant for each set of conditions. One thing I did not point out was that we were not working with small amounts of duodenal contents. We were working with amounts of 100 c.c. to 1 liter or more. The suggestion that barium might modify enzyme action is a very good one and one on which we worked. We found there was no appreciable difference between the duodenal contents containing barium and those containing no barium. We have used chemically pure barium sulphate, which is insoluble. As regards the uniformity of action of diastase, that enzyme gives the most variable degrees of action as determined by the methods we have used.

DR. MAX EINHORN, New York: Dr. White said he could get the tube into the duodenum in from twenty to thirty minutes. In one case I got the tube in in ten minutes. If you have to deal with pathologic conditions it may take a long time. I have had cases in which it took from twenty-four to forty-eight hours. I have no doubt that those men who apply the tube in any way they want will have some difficulty or will not get it in. In obstructive cases it will not go in. In regard to applying only one ferment, as Dr. Bassler said, this is not adequate because in pancreatic diseases we find that only one of the ferments may be present and that may be the one we are testing. The three ferments do not always go together. If we are going to get results we must have a test for all three. We must be able to manage with a small quantity—a pint or a quart will not do, as it is not always at our disposal. We must have three tubes, because that saves us the trouble of having to use great quantities of duodenal contents. Dr. Palefski spoke about duodenal contents changing. To each sample we add a few drops of toluene. That prevents the bacterial activity.

FOCI OF INFECTION IN CASES OF PYELONEPHRITIS

STUDY II *

HERMON C. BUMPUS, JR., M.D.
AND
JOHN G. MEISSER, D.D.S.
ROCHESTER, MINN.

In the report [1] of a recent study we attempted to show that pyelonephritis may often be due to focal infections and that the colon bacillus, which is usually found in the urine and believed to be the cause, is a secondary infection. In this work we injected laboratory animals with cultures obtained from possible foci in patients with pyelonephritis, and demonstrated the selective localization of these bacteria for the urinary tract. We desire now to report further progress in this study, and to give the results obtained in a series of six additional cases, with especial attention to one typical case. This will be reported in full, and only the results will be given in the twelve cases.

Because of the almost constant presence of the colon bacillus in the urine of patients suffering from pyelonephritis, attention has been centered almost entirely on it as the etiologic cause of the disease. The apparent direct lymphatic connection between the kidneys and the colon has led many research workers and clinicians to consider these lymphatics as the pathway of renal infection, and a colon teeming with bacteria an ever constant source from which the urinary tract may be infected. The natural inclination to ascribe to oral sepsis, which is frequently the cause of other infections, a contributory rôle in pyelonephritis was rejected because colon bacilli are rarely isolated from such foci, and their predominance in cases of pyelonephritis seems to exclude such a theory. Rosenow,[2] however, by his experimental work on the elective localization of streptococci, opened a field of investigation far reaching in its variety of application. The increasing evidence that bacteria are carried by the blood to the kidney and excreted, as demonstrated by Brown,[3] Cunningham [4] and others who obtained tuberculosis bacilli from the urine of patients who had pulmonary tuberculosis but no renal lesions, and the well known fact that the urine of patients with typhoid fever contains typhoid bacilli, indicate that renal infections may be of hematogenous origin.

That the organisms which reach the kidney and produce lesions later resulting in a colon bacilluria may be other than colon bacilli was suggested by Le Fur.[5] He attempted to produce vesical ulceration in laboratory animals by the intravenous injection of various bacteria. The results were so unsatisfactory that the intravenous injection was abandoned and the

* From the Section on Urology and the Section on Dental Surgery, Mayo Clinic.

* Read before the Section on Urology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Bumpus, H. C., Jr., and Meisser, J. G.: Focal Infection and Selective Localization of Streptococci in Pyelonephritis, Arch. Int Med. **27**: 326-337 (March) 1921.

2. Rosenow, E. C.: Elective Localization of Streptococci, J. A. M. A. **65**: 1687-1691 (Nov. 13) 1915.

3. Brown, Lawrason: The Significance of Tubercle Bacilli in the Urine, J. A. M. A. **64**: 886-890 (March 13) 1915.

4. Cunningham, J. H.: Facts Regarding the Relation of Tuberculosis of the Kidney to Tuberculosis of the Lungs, Boston M. & S. J. **165**: 872-875, 1911.

5. Le Fur, R. F.: Des ulcerations vésicales et en particulier de l'ulcère simple de la vessie, Paris, Steinheil, 1901, 810 pp.

organism was injected directly into the bladder or into the perivesical space. Ten different strains of bacteria, including the streptococcus, pneumococcus, colon bacillus, and so forth, were used. When the colon bacillus was injected it was recovered in pure culture; when other organisms were injected, the colon bacillus was frequently recovered with the injected organism. In three cases the colon bacillus alone was recovered, even though a different organism had been injected in pure culture. This is certainly suggestive evidence that the colon bacillus may be a secondary invader; and, considered with the well-known fact that any disturbance in the urinary tract, such as the presence of a stone, a stricture or a prostatic obstruction, is generally followed by a colon bacillus infection, makes the possibility of its playing a similar secondary part in cases of pyelonephritis seem credible.

With this idea in mind, we selected patients with pyelonephritis in whom possible foci were demonstrable. In the search for such foci the patients were carefully examined for evidence of past as well as present oral sepsis.

The examination of the teeth included not only roentgenograms to demonstrate the presence of apical abscesses and devitalized teeth, but also careful examination of all teeth by means of the pulp tester to ascertain their viability. This was done because in making routine cultures of extracted teeth we have found that at the apexes of pulpless teeth pure cultures of a green-producing streptococcus may be isolated even when the roentgenograms do not show evidence of periapical infection. It is not generally appreciated that there may be a vast number of organisms around a devitalized tooth before they destroy sufficient bone to make their presence manifest in the roentgenogram. We believe, therefore, that it is a mistake to exclude the teeth as a possible focus of infection simply because apical abscesses are not demonstrable by the roentgen ray. The same may be said of the tonsils. The fact that they are not enlarged and that pus cannot be expressed from them does not exclude them as possible foci, and it is our custom to have tonsillectomy performed in all cases in which the urinary infection may be reasonably believed to be of focal origin. Since we have adopted this procedure, a surprisingly large number of apparently negative tonsils have been found to hide deep seated virulent infections.

In cultures obtained from the extracted teeth, green-producing streptococci were always isolated; from the tonsils a more varied flora was obtained which, however, always included a green-producing streptococcus.

Fig. 1.—Section from rabbit's kidney showing necrotic area with marked leukocytic infiltration four days after intravenous injection of cultures of streptococci from an infected tooth (Case 344376).

Rabbits were injected intravenously with from 3 to 5 c.c. of such cultures. In order to be certain that the selective localization of these streptococci was not due to their incubation in artificial mediums or to an overwhelming dosage resulting from their increase in numbers, salt solution suspensions of tonsillar tissue were injected without incubation in several cases. In order to ascertain that the colon bacilli in the urine of patients did not possess specificity for renal tissues, pure cultures made from the urine of patients prior to the eradication of their foci were injected intravenously into nine rabbits, and necropsies performed. In none of the animals could lesions of the kidney be demonstrated. This finding is in keeping with the work of Helmholz and Beeler,[6] who injected colon bacilli obtained from patients into sixty-six rabbits and obtained lesions in the kidney in only eight.

The technic employed in isolating the bacteria and injecting the animals was that used by Rosenow in similar studies. The material from the infected teeth or tonsils and from the urine was spread on the surface of blood-agar plates and inoculated into tall tubes of glucose-brain broth. The cultures were incubated at from 35 to 37 C. The injections, from 3 to 5 c.c., were made intravenously with the primary culture in glucose-brain broth as soon as profuse growth had occurred, usually in from twelve to twenty-four hours. The viability and identity of the organisms injected were determined by plating on blood-agar. The growth thus obtained was then compared with that obtained on the blood-agar inoculated directly. The animals were anesthetized usually from three to six days after inoculation and thoroughly examined for lesions. Cultures were made as a routine on blood-agar plates and in glucose-brain broth from the lesions and from the blood, bile, urine, joint fluids, kidneys and spleen. The character of the lesions was determined by studying sections stained with hematoxylin and eosin, and the causative organism was identified in the lesions by gram stain. In the earlier cases the cultures thus recovered were again injected into other animals and produced like lesions of the kidney. In some cases a third animal passage was made. This was not done in the second series of experiments because of the scarcity of rabbits at the time.

Following the extraction of the suspected foci an acute exacerbation of the urinary symptoms usually occurred accompanied by chills of more or less severity, and a rapid rise of temperature. We have regarded

6. Helmholz, H. F., and Beeler, Carol: Focal Lesions Produced in the Rabbit by Colon Bacilli Isolated from Pyelocystitis Cases, Am. J. Dis. Child. 14:15 (July) 1917.

V. 192

such reactions as clinical manifestations of the specificity of the bacteria released from the removed focus, and believe that such increase in the severity of the disease should be considered favorably and an indication that the right focus has been eliminated. The correctness of this supposition was enhanced by the fact that prior to the eradication of the suspected foci only colon bacilli were obtained from the urine cultured, and that following the eradication of the foci streptococci appeared for a time. Specimens of these mixed cultures from the urine containing both colon bacilli and streptococci were injected intravenously into ten rabbits, and lesions of the urinary tract occurred in six of the animals, although, when the colon bacilli alone were injected, lesions did not result.

The six patients in this series had symptoms of the usual type of the disease. The duration of symptoms varied greatly; the shortest was three weeks, following an attack of tonsillitis; the longest was seven years. In two of the patients, tonsillitis and grip were considered possible etiologic factors; in four, the clinical histories gave no suggestion of the source of the infection. In all the patients, cystoscopic examinations were made; the urine from the kidneys was infected.

Cultures were made from both teeth and tonsils of one patient, from the tonsils of two, and from the teeth of three. These seven strains of bacteria were injected intravenously into twenty-six rabbits, twenty-one of which showed lesions in the kidneys at necropsy. There were lesions in both kidneys and in the bladder in two, and lesions in the ureter in one. There were, also, four lesions in the muscles, one in the stomach, and one in the gallbladder. The extra-urinary lesions were relatively slight compared with those of the urinary tract.

Fig. 2.—Diplococci and streptococci in and around the leukocytes in the necrotic area shown in Figure 1.

The catheterized urine from the rabbits was normal before injection; after injection a small amount of albumin with relatively few red blood cells, epithelial cells and a larger number of leukocytes were usually present.

The kidneys of the animals were about normal in size, or slightly swollen. In no instance was there a picture of diffuse parenchymatous nephritis, but always of localized infection. The capsule stripped readily in all. The cortex often presented small, opaque, yellowish-white areas, and on section the cut surface often revealed marked swelling and edema, especially of the medulla, sometimes associated with areas of hemorrhage varying in size from 1 to 4 mm. Varying numbers of necrotic areas were found in the medulla, some areas so small they were scarcely visible, others large, grayish-white streaks, necrotic-like in appearance, and gradually disappearing as they approached the cortex. These areas were surrounded by zones of congestion and hemorrhage. In only one instance was a hemorrhagic lesion found in the ureter.

On microscopic examination, no evidence of diffuse nephritis was found. The glomeruli were almost wholly free from lesions other than varying degrees of congestion. The necrotic areas showed marked destruction of the epithelium and marked leukocytic infiltration (Fig. 1). The parenchymatous cells immediately surrounding these areas were often granular and swollen, and the nuclei of many failed to take the stain. Sections stained by the gram method contained varying numbers of gram-positive diplococci, singly, in groups, or in short chains (Fig. 2). The leukocytes often contained many diplococci in various stages of digestion, depending on the duration of the experiments.

REPORT OF A TYPICAL CASE

Mrs. M. H. (Case 344376), aged 45, came to the clinic complaining of bladder trouble. Three weeks before, at the onset of her menstrual period, she had noticed a slight irritation at the neck of the bladder, and burning at the end of urination. Two or three days before she had stayed up all night with a daughter who was suffering with tonsillitis. She became chilled, and had a sore throat for the next few days. The bladder trouble grew gradually worse, and she called the local physician, who attended her for the next two weeks, during which time her temperature ranged from 99 to 104.5 F.; the night before she came to the clinic it was 104.5 She complained very little of pain except at the end of urination; she felt a slight soreness around the crest of the right ilium. A cystoscopic examination had been made two days before, and inflammation found around the right urethral orifice. Colon bacilli were recovered from the urine. A diagnosis was made of mild cystitis.

Examination revealed some slight tenderness in the left abdomen and over the crest of the right ilium. The temperature was 101. Four teeth revealed evidence of periapical infection in the roentgenograms; one was devitalized, but the roentgenogram was negative, and two had cavities of sufficient size to expose the pulps. From the tonsils, which were not greatly enlarged, fluid pus was expressed.

An occasional red blood cell and a large amount of pus were found in the urine. Stained specimens were negative for *Bacillus tuberculosis*. Roentgenograms of the urinary tract were negative. Two cystoscopic examinations, made before the suspected foci were removed, showed that the bladder was negative, but the urine recovered from the kidneys contained pus and gave a pure culture of gram-negative bacilli. Three rabbits were injected with cultures of these bacilli, and in none could evidence of lesions be found. The day after the second cystoscopic examination, two of the teeth with apical abscesses were removed, and cultures were made on blood-agar plates and in glucose-brain broth. In both,

green-producing streptococci were isolated on the blood-agar plates; a few colonies of staphylococci were also present. Three rabbits were injected; all had lesions of the kidney, and one had multiple minute hemorrhages in the right ureter near the pelvis of the kidney. Streptococci in pure culture were recovered from these lesions. The patient experienced no immediate reaction, as often occurs following the extraction of infected teeth, although for the next few days her temperature reached 101.

Six days later, three other teeth were removed, including one which did not show evidence of apical infection in the roentgenogram, but it had been devitalized and the root canal was filled. All gave pure cultures of green-producing streptococci. These were injected into three rabbits, resulting in lesions of the kidney in two, one of which had been injected with bacteria from the devitalized but otherwise negative tooth. The third rabbit did not have lesions. The day following the removal of these teeth the patient had a severe chill, and her temperature reached 106; a profuse sweating and falling temperature followed. During this reaction a blood culture was taken and large numbers of green-producing streptococci were recovered. Two rabbits were injected intravenously with this culture. Both developed lesions in the kidneys, and cultures made from these lesions yielded green-producing streptococci, while cultures from the gallbladder, blood, spleen, liver, etc., were negative.

RESULTS FROM ANIMAL INOCULATIONS

Streptococci from Teeth and Tonsils	Strains of Streptococci	Animals Injected	Animals with Lesions in: Kidney	Bladder	Kidney and Bladder	Joints	Muscles	Stomach	Gallbladder	Endocardium	Myocardium	Intestines
First study:												
On isolation	6	27	24	8	8	4	4	3	0	3	2	0
Second animal passage	3	11	7	2	1	0	1	1	0	0	1	0
Third animal passage	2	6	3	0	0	0	0	0	0	0	0	0
Second study:												
On isolation	6	26	21	2	2	4	4	1	1	0	0	0
Streptococci from:												
Patient's blood	1	2	2	0	0	0	0	0	0	0	0	0
Patient's urine	3	10	6	2	0	0	1	1	0	0	0	3
Total		82	63	14	11	8	10	6	1	3	3	3

The febrile attack was so acute and severe that doubt was expressed with regard to its renal origin. The possibility of its being a respiratory infection was suggested, although there were no pulmonary symptoms. In order to clear this point, cultures were injected directly into the trachea of five guinea-pigs. At necropsy no pulmonary lesions were found, but in one guinea-pig the kidneys and ureter were markedly involved.

Urine obtained from the bladder the day of the chill, the day following, and on the fourth day, contained only colon bacilli. On the fifth day, however, the patient being sufficiently recovered to permit of cystoscopy, the urine obtained from the kidney and bladder contained occasional streptococci, but it contained colon bacilli in far greater numbers.

Samples of the mixed cultures were injected into five rabbits; three developed lesions of the kidneys. Streptococci and colon bacilli were recovered from the lesions in two rabbits; the three remaining had lesions in the intestines.

In order to study the relative ability of the two organisms to grow in urine, a twenty-four hour sample of the patient's urine was autoclaved, on three different occasions, and after being proved sterile, samples were inoculated and incubated with colon bacilli, some with streptococcoci and some with both. It was found that while the colon bacilli multiply readily the streptococci have no such ability, and only a few more than were planted could be recovered. We believe that this explains the reason for the frequent absence of the etiologic organism in the urine of patients with pyelonephritis. Occasionally, as in a case reported by Kretschmer,[7] secondary colon bacillus infection does not occur and streptococci are found in pure culture.

7. Kretschmer, H. L.: Discussion following paper by Schmidt, L. E.: Bacteriuria, Tr. Sect. Genito-Urin. Dis. A. M. A., 1918, p. 276.

Eighteen days after the second extractions, the patient's remaining infected teeth were removed without incident. Pure cultures of streptococci were recovered. Four animals were injected; two developed lesions of the kidney, one very pronounced; one had lesions of the joints and one of the muscles. Pure cultures of streptococci were recovered from all the lesions, the unaffected organs being sterile.

During the intervals between the extraction of her teeth, cystoscopic examination of the patient was made four times, and at each examination pus cells were found in the urine from the kidney, and cultures therefrom contained colon bacilli; a few streptococci were also found after the second extraction.

After all the patient's infected teeth had been removed, six cystoscopic examinations were made. The specimens of urine from the kidneys were free from pus, and on culture a gram-negative bacillus was the only organism found. Cultures made at each successive cystoscopic examination yielded fewer organisms; the last one which was taken at the time of the patient's dismissal, one month after the last of the septic teeth had been removed, contained only fifteen colonies on a blood agar plate from urine from the right kidney; cultures from the left kidney were negative.

During the time pus was found in the urine from the kidneys, the pelvis was lavaged with a 1 per cent. solution of silver nitrate, but after the disappearance of the pus following the extraction of the last teeth only boric acid was employed.

A specimen of the patient's voided urine was brought to the clinic one month after her dismissal. It was negative except for three pus cells to the microscopic field. Her physician stated that she was free from symptoms, had had no fever, and was planning to return to the clinic for a tonsillectomy.

CONCLUSION

A summary of the results in our second series of cases, with the results in the six cases previously reported, shows that eighty-two rabbits were injected with strains of a green-producing streptococcus obtained from the teeth, tonsils, urine and blood of patients suffering with pyelonephritis, and that in sixty-three of the animals lesions of the kidneys were found. This, we believe, is evidence for concluding that pyelonephritis may often be due to focal infections harboring streptococci which have a selective affinity for the urinary tract, and that the colon bacillus, which is commonly found and generally believed to be the cause, is of secondary importance.

ABSTRACT OF DISCUSSION

DR. E. G. CRABTREE, Boston: Urologists are indebted to Dr. Bumpus and his co-workers at the Mayo Clinic for investigation of the selective action of bacteria for organs. If it is a definite fact that an organism, either because of its previous environment or because it belongs to certain strains, will infect kidneys and not other organs, that fact is of exceedingly great significance. Dr. Bumpus has pointed out that the colon bacillus stands out as the infecting agent in mixed infection with cocci. I have long been interested in this occurrence. It is well exemplified in the colon pyelitis which occurs only when there is a simultaneous infection with the coccus from the tooth cavity. This fact is quite similar to clinical occurrences in infectious diseases. I have investigated a series of "idiopathic" colon bacillus pyelonephritis cases. In many instances the condition took its beginning during an acute infection from some definite known organism, such as the typhoid bacillus, pneumococcus or influenza bacillus. The organism which produced the urinary infection was not the one concerned in the infection of the patient, but the colon bacillus. In other instances the infection began during the course of a wasting disease, such as carcinoma, after exposure, underfeeding, and in the first month or two of pregnancy. It seems to me possible that the association of the streptococcus from teeth in the experiments recorded in

Dr. Bumpus' paper is similar to these cases cited, and that the selective action means nothing more than that the combined action of the bacteria makes possible invasion and infection by that organism—the colon bacillus—which most readily invades the urinary tract. In case there is renal invasion and infection by multiple organisms, the tendency of the colon bacillus to persist, outgrow and usurp the whole field is well known.

DR. GEORGE R. LIVERMORE, Memphis, Tenn.: A patient with iritis was sent to me to find out where the infection was. There was no history of urinary infection of any kind, but as she had two crowned teeth she was sent for roentgen-ray examination, and two abscesses were found under these teeth. The teeth were removed and in two or three days the patient had a rise of temperature. Later she had a rigor, and a catheterized specimen of urine showed pus and colon bacilli. Later these were found to come from the right kidney. Under lavage, these symptoms cleared up completely. This patient had had no trouble with the urinary tract, and the teeth were removed as being a point of infection producing the iritis. A man about 60 years old had some vasomotor disturbance causing trouble with the lower extremities. A roentgen-ray examination was made of his teeth. Two or three infected teeth were extracted. Pyelitis followed. We found pus and colon bacilli in both kidneys. This patient died from uremia. Is it not true that pyelitis resulted in these two cases from absorption of the infection through the denuded areas in the root cavities?

DR. HERMON C. BUMPUS, JR., Rochester, Minn.: It has been the experience of the Mayo Clinic that the removal of teeth, if they contain a focus of infection, frequently produces a very marked systemic reaction. Therefore, more than two or three teeth should not be removed at one time. Le Fur, in an earlier experiment to which I have referred, found that after the injection of different strains of bacteria intervesically the colon bacillus alone was frequently recovered. This, we have found, is still further indication that this organism acts as a secondary invader.

RHINOPLASTY, WITH SPECIAL REFERENCE TO SADDLE NOSE*

V. P. BLAIR, A.M., M.D.
ST. LOUIS

In the reconstruction of the nose, unless it can be made both functionally and cosmetically acceptable, it is better to give the patient a prosthesis.

Total restoration of the nose, while an interesting and thoroughly sporting surgical procedure, has in civil practice a very limited field compared with the correction of the more common nasal defects and incongruities; but when judged by the public at large, a somewhat crude complete restoration has heretofore been likely to attract more attention and elicit more favorable comment than some very nice piece of reconstruction of smaller extent that gives harmony to features previously somewhat unbalanced. This attitude on the part of the public will not last, and the time is not distant when actual visible results commensurate with the accepted ideals of natural facial contour and balance will be demanded.

The common causes of failure are a lack of proper support to bridge or tip, a lack of adequate lining, a lack of a definite ideal to work to, and a lack of accuracy in cutting the materials. I think the two essential advances in rhinoplasty during the war were the universal recognition that the lining is as essential as the external covering and, to a very much less degree, that the reconstructed parts should be cut from carefully made patterns (Fig. 3).

A rhinoplasty might be divided into three essential parts: the providing of the lining, the covering and the supporting frame. Any case may entail a combination of two or all three of these (Figs. 6 and 9).

The most dependable tissue for covering the nose and one which can also be used for the lining is the skin and subcutaneous tissue of the forehead. The use of this is known as the Indian operation. The forehead defect can be immediately filled in by a full thickness skin graft from the abdomen, which, when carefully done, will make only a slightly noticeable repair (Fig. 5). The next most adaptable tissue is skin from behind the ear brought up on a long flap taken transversely from under the chin. The arm skin, the Italian method, or skin from the chest, or skin from the abdomen by a "jump flap" do not so well conform in appearance to the normal nasal skin. One must remember that variations in the general adiposity can register in the transplanted flap. Small or even quite considerable flaps can be made from the cheeks, but with less accuracy than from the fore-

A B

Fig. 1.—*A*, war injury with considerable loss and crushing of both cheeks and nose; *B*, nearly completed restoration in which the new nose, though of good shape, is a little large for the face and in this way mars the result.

A B

Fig. 2.—*A*, almost total loss of nose and part of supporting tissue. Notice that, owing to loss of floor of nose, the upper lip has a more oblique position than normal. This is not quite so noticeable as it would be without the breathing tube. *B*, restoration, better balanced in this case and therefore more pleasing in spite of the fact that the upper part of the bridge is a little too high. Both ala and columella bear a good relation to the lip, which has been brought forward by restoring the lining of the nose.

* From the Surgical Department of Washington University Medical School.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

head and the defect is more noticeable; but a columella is quite well made from the upper lip.

For the supporting tissue, sometimes the septum can be swung forward to hold up a cartilaginous bridge, a tripod of implanted cartilage can be brought up to meet at the tip of the nose, or a piece of costal cartilage or a piece of the junction of the rib and cartilage can sometimes be made to get its foundation along the upper two thirds of the nasal area and to protrude downward and forward so as to support the bridge and the tip and at the same time insure a breathing space (Fig. 4). The latter I believe to be the preferable way to use living tissue. It is frequently convenient to insert the cartilage into the site of the future flap some time before it is transplanted (Fig. 6). Celluloid has been satisfactorily inserted into the tissues and is the method of choice with some for the treatment of saddle nose.

Fig. 3.—Plaster cast of face, on which has been built a clay nose of the type desired and on which also are traced the outlines of the flaps used in the reconstruction.

A B C

Fig. 4.—*A*, sinking in of bridge, and turning up of tip of nose. *B*, what the restoration would be if we simply filled the depression of the bridge without making the implant long enough to force the tip down to the normal position; *C*, result after a cartilage implantation. There has been some controversy as to whether these cartilaginous implants are best inserted from below the tip, from within the nostril or through a transverse incision corresponding to the spectacle bow. For simple raising of the bridge, the intranasal route or the incision under the tip may be satisfactory; but to do a concomitant lengthening of the nose, I believe the external incision will be found much more satisfactory. The line of incision is rarely noticeable after sufficient time has elapsed for the scar to loosen.

I am not sure but that for a complete rhinoplasty, a removable support passing through a hole in the hard palate and attached to a dental prosthesis, as long ago devised by Martin of Lyons, is not, all things considered, the most exact plan.

Bone may be successful in some cases. I do not know. But the general observation is that transplanted bone without normal function does not survive, and in at least two cases of rib transplant for rhinoplasty that have come under my observation two years later the bone has been completely or almost completely absorbed. On the other hand, my observation is that where perichondrium remains in contact with two thirds of its circumference, the cartilage will persist. We have one case in which the transplanted cartilage has remained unchanged fourteen years.

For lining, the simplest procedure is the Thiersch graft applied either to the under surface of the covering flap some time before it is transplanted, or applied over a form; but in every case I have observed in which this plan was used, the subsequent contraction was so great as to demand a relining of the nose. I am not yet perfectly satisfied with our technic, but I believe that in the future a full thickness, free skin or mucous membrane graft is going to be the answer to all these lining problems. Up to the present, however, the pedicle flaps of skin or mucosa have been the successful plan, and they will never be entirely displaced. The sacrifice of a finger, in the present development of technic, is not advisable.

A B

Fig. 5.—*A*, Defect, following use of a cancer paste, in which scar contraction has lessened the size of the opening and distorted the tip and ala upward. The correction in this type may be done by outlining two flaps on the forehead, one for a lining and one for a covering, the former having the base of its pedicle just above the defect and placed centrally. The base of the pedicle of the covering flap contains the angular artery. The latter flap is made very thin, taking up only sufficient tissue to insure nourishment. The lining flap contains both skin and muscle and in it is implanted, at a previous operation, the cartilage for the bridge. The vitality of these flaps is insured by delayed transplantation. *B*, result of operation, the forehead defect having been filled by an immediate full thickness skin graft. The scars are still plainly visible from recent operation.

The peculiar deformities associated with faulty repair of harelip are to be corrected by the transplantation of the nasal bridge and the transplantation and resuturing of the ala.

I will present two cases of nasal restoration (Figs. 1 and 2) after war injuries to emphasize the statement made in the opening paragraphs, and then pass on to a very common type of nasal deformity that is objectionable both from a cosmetic standpoint and because it so commonly, and often unjustly, suggests the presence of venereal disease. I refer to saddle nose in its various types, and will present a series of illustrative cases.

The deformity may be due to a traumatic separation of the cartilages from the nasal bones which is restored by replacement and suture.

A common type is that in which the bony bridge has been lost or flattened from injury, surgical operation, local infection or sometimes systemic disease which causes a loss of the normal prominence of the bridge, an increase of the apparent distance between the internal canthi, and usually a turning up of the end of the nose with a loss in length (Fig. 4 *A*). The correction

Fig. 6.—Diagrammatic illustration of the method of turning down the flaps.

of this by cartilage or prosthetic insert is a fairly simple procedure, but besides raising the bridge of the nose, we must correct the shortening and upturning of the tip (Fig. 4 *B* and *C*).

The whole thickness of the bridge, bone, cartilage, skin and mucosa may be destroyed, demanding the

A B

Fig. 7.—*A*, deformity resulting from the removal of a tumor on the bridge of the nose in doing which there had been much destruction of the lining. A vertical incision was made through the left nostril and continued up along the midline of the bridge. Through this the lining scar was incised and the tissues undermined from the facial bones until the parts could be restored to their normal position. The resulting gap was filled with a flap from the forehead. *B*, restoration was made to correspond to the pronounced negroid type, which was what the patient desired.

formation of a lining, a covering and a cartilaginous insert (Fig. 5).

In another type of saddle nose there is an actual deficiency in the external length and also in the lining membrane, with or without a corresponding deficit in the supporting tissues. In these cases an increase in the anteroposterior extent of the lining is the prime essential.

The deformity may be due to late ulceration, to the removal of a tumor (Fig. 7), or more commonly to the "snuffles" in early infancy (Fig. 8) which, by thickening and scarring the mucosa, prevents the forward growth of the nose and those parts of the maxilliary bone which are in contact with the nasal lining. In restoring the latter cases, the lining may be obtained from a forehead flap in the manner explained in the legends under the illustrations, from mucous flaps obtained from the cheeks, or from full thickness free skin grafts.

A B

Fig. 8.—*A*, extreme retraction of nose and associated parts of the maxilla due to "snuffles." *B*, restoration by procedure described under Figure 9. Note that this procedure not only brought the nose forward and lengthened it, but has also changed the set of the lips.

Fig. 9.—Scheme of implanting two flaps taken from the forehead for the purpose of extending forward the tubular lining of the nose. After this transplanted lining had acquired a blood supply from its new bed, the pedicle was divided and the remaining part used to piece out the dorsum of the nose (Fig. 8 *B*).

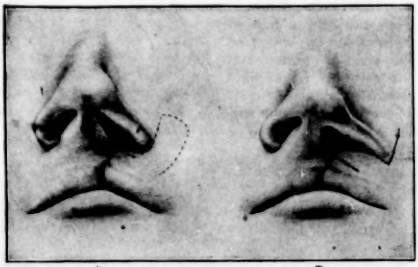
Metropolitan Building.

ABSTRACT OF DISCUSSION

DR. FERRIS N. SMITH, Grand Rapids, Mich.: I do not believe that there is any excuse for the surgeon's ever taking tissue from the arm and applying it to the face. The reason is the discomfort to the patient, the pain caused by the arm being in a fixed position. Patients have been known to commit suicide as the result of this. In cases in which the apparatus has been worn with fortitude to the end of the period, when the apparatus was taken off there have been reports of death from embolism, and so on. By use of the pedicle flap the same result can be obtained, transplanting the skin from the chest or back without any discomfort. Therefore, the Italian method of obtaining soft parts for repair should be put in the discard. As to saddle noses, the function of the surgeon is first to restore function and, second, to produce a pleasing result. With that in view, it does

not seem that one is justified in splitting the nose lengthwise to put lining inside of it, if you can line over a vulcanized model held in place with a dental splint, or whatever apparatus one wishes to use. The only type of saddle nose which admits of immediate repair is one that is seen early and in which the saddle is very small.

Dr. Robert H. Ivy, Philadelphia: There is no question of the superiority of the forehead, or Indian method, and its modifications in the restoration of the whole or the major part of the nose. Given an extensive defect of the covering of the nose, the forehead flap method is the method of choice. It is in the lesser degrees of deformities of the nose that we are puzzled to know what is best to be done, that is, where to get the tissue. With even a small loss of the tip or alae, the forehead tissue supplies a skin that most closely resembles that of the nose, but it may be questionable whether in these minor cases of small losses we are justified in making additional scars on the face that may be more conspicuous for a time than the original nasal defect. Flaps taken from the cheeks for these small defects are open to the same objection of forming unsightly scars which may make the case worse than before. It is in these cases of small defects of the nose that the texture of the skin which is to replace the defect is not so important, and we can make pedicle flaps from either the neck or the chest, and by tubing them we can transfer the tissue for a considerable distance. When replacement of supporting tissue is necessary, we should rely on the autogenous living tissues and not depend on paraffin, celluloid or any artificial substance. Transplanted bone embedded in soft tissues without broad contact with living bone generally undergoes absorption, but cartilage thus transplanted usually will not obsorb whether or not it has a covering of perichondrium. The perichondrium tends to protect the graft from infection. Also, the graft will become concaved slightly on the side on which the perichondrium is attached, and this may be of advantage if curvature of the graft is desired. In cases of depression of the lower or cartilaginous portion of the bridge of the nose, the cartilage transplant can be inserted from below rather than through the ordinary incision between the eyes. This has considerable advantage because the

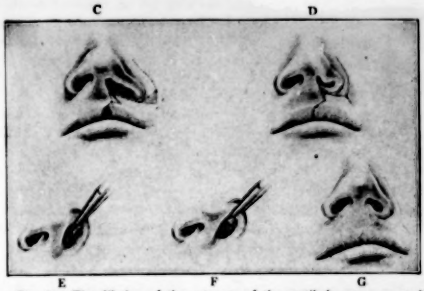


A B

Fig. 10.—In this illustration and Figure 11 are given the steps in the correction of a case illustrating most of the nasal deformities that can follow in the wake of a poorly repaired harelip. Following an unsatisfactory repair of the lip on the left side, the nasal bridge has drifted to the right, the lower border of the septum has turned to the right, the body of the septum has buckled to the left, and the left ala has spread farther to the left side than normal; but, owing to the operator's having extended the lip incisions too high up into the nose, there is a constriction in the upper part of the nasal vestibule. The bridge of the nose is straightened by cutting the nasal bones free from the nasal processes of the maxillae subcutaneously with a chisel inserted through each nostril and by cutting the septum submucously from its attachment to the maxillary bones. To relieve the vestibular constriction shown at *A*, the floor of the vestibule was split and spread, and the flap outlined was implanted, giving the condition shown at *B*.

incision is nearer to the point at which the cartilage is to be placed. The incision in these cases should be made through the skin just behind the tip of the nose because of the danger of infection in going through the mucous membrane. The scar is in an inconspicuous place and very quickly becomes invisible.

Dr. J. Shelton Horsley, Richmond, Va.: Some time ago, Dr. Blair called attention to what he termed delayed transplantation of a flap, by which he means that he first outlines the flap by incision and at a subsequent operation transplants it. I have been going a step further than that, particularly in elderly patients in whom the defect follows an operation for cancer. In such patients the vitality is low and the nutrition of the flap is poor at best. I first outline the flap as from the forehead and then, after five or six days, dissect up a portion of it under local anesthesia and continue to separate it a little at a time at intervals of five or six days. In this way the



C D

E F G

Fig. 11.—The dilation of the entrance of the vestibule was corrected by the incision shown at *C* and suturing the tissues into the position shown at *D*. *E*, *F*, the collapse of the ala cartilage was corrected by excising the impinging part through a V incision in the roof of the ala and converting the V into a Y, giving the result shown at *G*.

blood supply of the pedicle is gradually built up and the flap can be transferred without fear of necrosis. After the flap has been put in place, the procedure is reversed and the pedicle is cut a little at a time at intervals of a few days, or it may be clamped for half an hour a day, beginning seven or eight days after the operation. The clamp should, of course, be very soft. A rubber band may be used instead. In basal cell carcinoma, or the so-called rodent ulcer, there is no metastasis in distant glands, though the basal cell cancer occupies the same region and has access to the same lymphatics as the spinal cell type of squamous cancer, which readily metastasizes in the neck. It seems that this must be due to some natural immunity of the tissues which is broken down by the proximity of the cancer itself. Taking advantage of this, I have made a practice of transferring a flap from a distant part after operations for basal cell cancer. In this way the natural immunity, which seems to exist in tissues at a distance from this cancer, is applied as soon as possible to the site of operation on a basal cell cancer. I believe this has an important bearing on the cure in this type of cancer.

Dr. Vilray P. Blair, St. Louis: I have never been tempted to make a nose from the hand or arm and do not even like cheek tissue. If you cannot get tissue from the forehead, the next choice is to take it from behind the ear; the resulting defect can be filled with a Wolfe graft. I have heard a great deal about the Thiersch graft for lining, but have never seen a case in which this was done that I did not think the graft should be replaced on account of the contraction which followed. I think the time is coming soon when we will use full thickness grafts for the skin or the lining. In all this work I use the delayed transplantation method, outlining the flap, resuturing it in its original bed and, when put in its new position, filling in the defect with a full thickness graft. In a basal cell cancer one can cut off as much of the nose as necessary and immediately bring down a flap, making repair with the tissue provided. An excision with a white hot cautery, not red hot, will heal just the same as if a knife was used.

Obstetric Teaching.—As teachers we must distinguish between what is safe for the trained specialist to do, and what is safe for us to teach our students to do; for we must all admit that we are not turning out a trained product in obstetrics when we graduate our men from a medical college. —J. O. Polak, *Am. J. Obst. & Gynec.* **2**:239 (Sept.) 1921.

THE BLIND SPOT

III. THE RELATION OF THE BLIND SPOT TO MEDULLATED NERVE FIBERS IN THE RETINA *

HARRY S. GRADLE, M.D.
CHICAGO

In this, the third article of this series, the discussion will be limited to the relationship of the blind spot to medullated nerve fibers in the retina. Since von Jaeger's [1] first communication on this subject in 1855, it has been taken for granted that the presence of medullated nerve fibers, emanating from, or adjacent to, the disk was projected into the visual field in the form of an enlargement of the blind spot of Mariotte. This view persisted despite the anatomic examinations by Virchow,[2] Beckmann,[3] von Recklinghausen,[4] Schmidt-Rimpler [5] and others, all of whom were agreed that the retina underlying the medullated nerve fibers was normal in respect to the light perceiving elements therein contained and corresponded anatomically to the functionally active retina of other locations. The one exception to these findings was reported by Mayerweg [6] who described an eye with medullated fibers overlying a retinal area in which the rods and cones were entirely absent. But there were other pathologic conditions present that could account for this unusual finding.

Landolt [7] was the first dissenter from von Jaeger's point of view, and, in 1909, he advanced the assertion that the enlargement of the blind spot does not always correspond either in size or shape to the ophthalmoscopic picture of the anomalous nerve fiber condition.

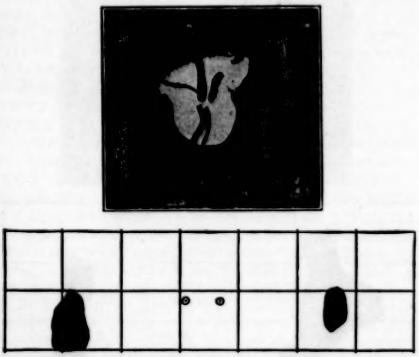


Fig. 1 (Case 1).—Medullated fibers in right eye. Enlargement of blind spot corresponds only roughly in shape, and not at all in size.

In support of this, he presented the findings in three cases in which he had made a most careful study of the blind spot, even employing the painstaking and tedious technic advocated by Helmholtz.[8] Landolt believed that the variation was dependent on the thickness of the medullated layers, which could not be estimated ophthalmoscopically. Two cases studied by Kleczkowski [9] yielded identical results with those of the previous investigator. Leber [10] corroborated this view in 1916 and added reports of two cases of his own, one of which had been observed over a long period of years without change. The variation in thickness of the medullated layers was impossible of ophthalmoscopic determination on account of the high light reflexes. In 1910, Langenham [11] transilluminated various cases of medullated nerve fibers with the ophthalmodiaphanoscope and actually saw that the areas with medullated fibers transmitted light throughout their entirety, but in varying amounts, thinning out toward the peripheral edge of the ophthalmoscopically visible medullation. The area near the disk was correspondingly darker, dependent on the thickness of the layer. Only recently Koeppe [12] was able with his mirror addition to the Gullstrand slit lamp and the Czapski corneal microscope to study a case of medullated nerve fibers with 65 diameters magnification. He found that the medullation was heaviest adjacent to the disk and became thinner as the distance from the disk increased. Unlike the ophthalmoscopic picture, there was no sharp or even approximately sharp line of demarcation between medullation and nonmedullation of the fibers; but on the contrary, the medullation became gradually thinner and thinner until it disappeared from view entirely, as a very fine frayed-out rope end. The thinning of the medullation extended far beyond the limits of ophthalmoscopic visibility. This corresponds entirely to the anatomic picture described by Schmidt-Rimpler,[5] who made sections in such a case, sagitally. He found that the medullation formed a triangular area in the superficial retina, with the base resting on the disk, and the apex drawn out

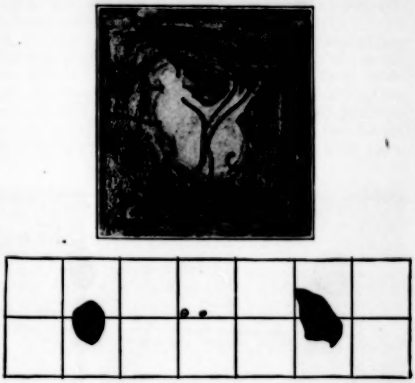


Fig. 2 (Case 2).—Medullated fibers in left eye. Note absolute lack of correspondence between ophthalmoscopic picture and blind spot enlargement.

* Read before the Section on Ophthalmology at the Seventy-Second Annual Session of The American Medical Association, Boston, June, 1921.

1. Von Jaeger: Beitr. f. Path. d. Auges, 1855, p. 36.
2. Virchow: Virchows Arch. f. path. Anat. **10**: 170, 1856.
3. Beckmann: Virchows Arch. f. path. Anat. **19**, 1857.
4. Von Recklinghausen: Virchows Arch. f. path. Anat., 1854.
5. Schmidt-Rimpler: Klin. Monatsbl. f. Augenh., 1874.
6. Mayerweg: Arch. f. Augenh. **46**, 1903.
7. Landolt: Arch d'opht. **29**: 337, 1909.
8. Helmholtz: Handbuch der physiologischen Optik, Ed. 3.
9. Kleczkowski: Post okul. **11**: 9, 1909.
10. Leber, Grafe, Saemisch: Ed. 2, 1916.
11. Langenham: Ztschr. f. Augenh. **23**: 201, 1910.
12. Koeppe: Arch. f. Ophth. **97**.

to a fine point in the distant retina. Further, there was always a thin layer of nonmedullated fibers between the medullated fibers and the limiting membrane of the vitreous.

The six cases herewith reported have been studied during the last five years with the tangential magnet scotometer that I described in 1916 and have been

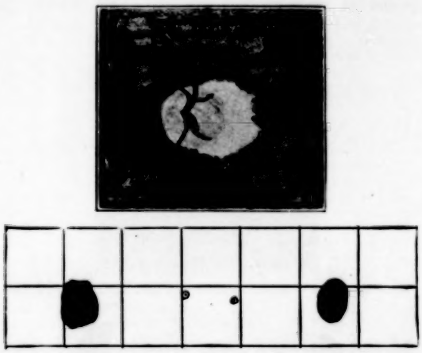


Fig. 3 (Case 3).—Medullated fibers in right eye, located laterally. Blind spot is only slightly enlarged, and does not correspond.

using ever since. The screen is at 60 cm. from the patient and there is a secondary fixation mark interposed between the patient and the primary fixation mark on the screen. The target is a 2 mm. steel ball that is rolled over the blank surface of the celluloid screen by means of a steel arm pivoted behind the screen. As this arm lies within the magnetic field of the solenoid that encircles the screen, it acts as a magnet and holds the steel target against the anterior surface of the screen. With each case is presented a sketch (as accurate as possible as to comparative size of disk and medullated fibers), the blind spot involved, and the blind spot of the other eye. In one case, the anomaly was bilateral, and comparison must be made with the blind spot of the unaffected eyes in the other cases.

REPORT OF CASES

Case 1.—Mrs. W. J. W., aged 35 years, complained of headaches on close use of the eyes. She had a low degree of hyperopic astigmatism and normal vision. In the right eye were medullated nerve fibers covering the upper half of the disk and obliterating the outlines. Some of the larger vessels penetrated the fiber layer and disappeared from view, while others were visible throughout their entire course. The blind spot showed a fairly regular enlargement, not corresponding in the slightest to the shape of the mass of medullated fibers, with the single exception that the enlargement of the blind spot was downward, which corresponds to the upward location of the medullated fibers.

Case 2.—Mrs. D., aged 38 years, complained of periodic headaches. There was a low degree of hyperopic astigmatism, with normal vision. Covering the upper nasal quadrant of the left disk was a mass of medullated nerve fibers completely obliterating the vessels from view. Following the superior temporal vessels were more medullated fibers, but these did not hide the vessels. The blind spot was moderately enlarged, but did not correspond in the slightest to the shape of the mass of fibers seen ophthalmoscopically.

Case 3.—Mr. F. W., aged 43 years, said his eyes reddened on use. There was a low degree of hyperopia and hyperopic astigmatism. Vision was normal. Covering the nasal border of the right disk was a mass of medullated nerve fibers about one-half disk diameter in width. No vessels could be seen through these fibers. The blind spot was slightly enlarged, but did not correspond in shape or size to the mass of medullated fibers.

Case 4.—Miss A. H., aged 14 years, had broken her glasses. There was a low degree of hyperopia and hyperopic astigmatism. Vision was normal. The right disk was entirely surrounded by an irregularly shaped mass of medullated nerve fibers. In places, the vessels were hidden from view entirely; in others, they were only partially concealed, while again they seemed to lie free upon the surface of the fibers. The blind spot was enlarged and corresponded fairly accurately both in size and shape to the ophthalmoscopic picture of the mass of medullated nerve fibers.

Case 5.—Mr. A. H. G., aged 70 years, complained of presbyopia. There was a low degree of hyperopia and hyperopic astigmatism. Corrected vision was slightly below normal. The lower third of the right disk was covered by a mass of medullated nerve fibers completely obliterating from view all of the vessels. Extending upward from the disk was a small nub of medullated fibers hiding the superior vessels from view. The blind spot was vertically enlarged, but did not correspond either in size or shape to the mass of medullated fibers seen.

Case 6.—The patient was the same as in Case 5. The left eye was involved. Corrected vision was only 0.5. The nasal half of the disk was covered by a mass of medullated nerve fibers that extended from two to four disk diameters upward, downward and laterally from the disk. All of the vessels of this area were hidden from view by the mass. The blind spot

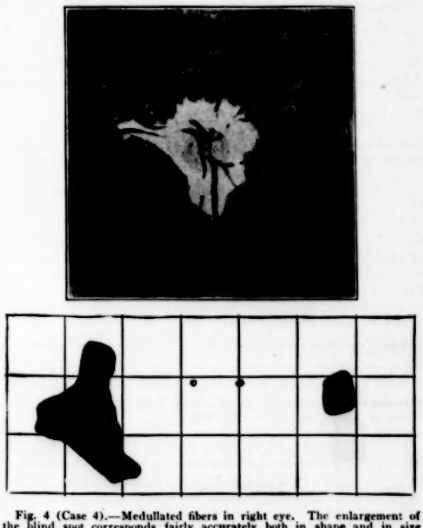


Fig. 4 (Case 4).—Medullated fibers in right eye. The enlargement of the blind spot corresponds fairly accurately both in shape and in size to the ophthalmoscopic picture.

was enlarged and corresponded in general contour to the ophthalmoscopic picture; but the size and details of the individual outline of the blind spot differed markedly from the mass seen in the fundus.

COMMENT

In one of the six cases (counting the two eyes of one patient as separate cases) there is a correspondence

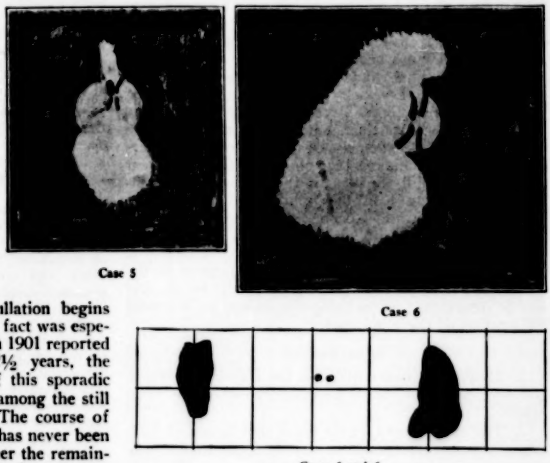
V. 192

in size and shape of the mass of medullated fibers as seen ophthalmoscopically with the blind spot as delineated by the magnet scotometer. In this one case, there was one of the largest areas of medullated fibers that I have ever seen, and it gave the impression of being a thick layer. But vessels were visible under the opaque fibers at different places. Ophthalmoscopically it could not be differentiated from a case that showed but little enlargement of the blind spot, corroborating Landolt's [7] contention that it could not be determined, *a priori*, which cases would show an increase in the size of Mariotte's scotoma. Nor could any relationship be found in the other cases between the ophthalmoscopic picture and the outline of the blind spot as to the size, although the shape of the latter in every case was suggestive.

According to Piersol,[13] the medullation of a nerve fiber is due to a sheath of delicate reticular framework, composed of neurokeratin. This sheath surrounds a cylinder of fatty substance called neolin to which is due the white color of the medullation, and which in turn surrounds the nerve fiber proper. Medullated nerve fibers, in the optic nerve proper and in their anomalous location in the retina, differ from other medullated nerve fibers in that they possess no neurilemma or sheath of Schwann. Within the optic nerve, the medullation develops late as a rule, not until after birth, and it ceases abruptly at the posterior aspect of the lamina cribrosa. In no case has medullation ever been found between that point and the surface of the nerve head, and in the majority of cases in which there are medullated fibers present in the retina, the medullation begins near the outer margin in the disk. This fact was especially emphasized by von Hippel,[14] who in 1901 reported medullated fibers in a child, aged 2½ years, the earliest case on record. The cause of this sporadic medullation of retinal nerve fibers falls among the still unexplored phases of ophthalmology. The course of development of intraretinal medullation has never been observed; but it probably starts long after the remaining portions of the eye have passed through the developmental stage. The frequency of medullated nerve fibers within the retina is about 4 per thousand. That such medullation may retrogress is shown by Behr, who reported a case of traumatic descending atrophy of both optic nerves accompanied by a traumatic hypophysial dystrophy. Medullated fibers were visible in the retina when first seen, but these disappeared gradually within two months after the atrophy became ophthalmoscopically visible. A similar disappearance was reported by Wagenmann [15] in a case of tabetic atrophy, in which the medullation of the fibers disappeared gradually with the appearance of the atrophy and completely with the onset of amaurosis. At times, medullated nerve fibers in the retina are found in association with other ocular anomalies, as in a case of heterochromia iridis, reported by Cabannes and Soulard.[16]

13. Piersol: Normal Histology, 1906.
14. Von Hippel: Arch. f. Ophth. **52**: 1901.
15. Wagenmann: Cited by Behr, C.: Klin. Monatsbl. f. Augenh. **59**: 241 (Jan.) 1917.
16. Cabannes and Soulard: Rec. d'opht. **33**: 6, 1911.

As previously mentioned, the earlier observers (von Jaeger, Becker,[17] Doritz,[18] Soelberg Wells [19] Monesi,[20] and others) were firmly convinced that the size and shape of the blind spot corresponded completely to the ophthalmoscopically visible mass of medullated nerve fibers, and this theory was brought to light again recently by Hoeg.[21] This author investigated a case of medullated nerve fibers with the Bjerrum screen, 5/2,000 (5 mm. target and screen 2,000 mm. from the patient) and found that the scotoma for white as well as for colors corresponded absolutely to the ophthalmoscopic picture. In his textbook, Weeks [22] says, "A scotoma exists in the field of vision corresponding with the retinal areas occupied by the patch of opaque nerve fibers." De Schweinitz [23] expresses a more modified view with the statement that "the condition (presence of medullated nerve fibers at the disk) produces no change in vision except an increase in the size of the normal blind spot." Fuchs [24] bears the same opinion, "The vision of such eyes (with medullated nerve fibers) is often reduced and Mariotte's blind spot enlarged." But a footnote by the translater Duane adds this modification, "The presence of medullated fibers does not necessarily cause a corresponding enlargement of the blind spot (Leber)." The careful work of Landolt,[7] the exhaustive study of his cases by Leber,[10] and the six cases herewith reported lead to the conclusion that, despite the findings of the earlier investigators (whose views were based on results



Case 5 Case 6

Cases 5 and 6

Fig. 5 (Case 5).—Medullated fibers in the right eye. The enlargement of the blind spot (on the left) corresponds in position, but not in size or in actual shape. (Case 6).—Medullated fibers in the left eye. The enlargement of the blind spot (on the right) is not equal to the ophthalmoscopic picture, nor does the shape correspond.

17. Becker: Wien. med. Wchnschr. **28, 29**: 1861.
18. Doritz: Reichert and DuBois Arch., 1864, p. 741.
19. Soelberg Wells: Lancet **2**: July 1, 1871.
20. Monesi: Arch. d'opht. **29**: 1909.
21. Hoeg, N.: Ophthalmologische Gesellschaft, March 13, 1912; Det Oftalmologiske Selskab, Köbenhavn, April 28, 1920.
22. Weeks: Textbook of Ophthalmology, 1910.
23. De Schweinitz: Textbook of Ophthalmology, 1914.
24. Fuchs: Textbook of Ophthalmology, 1916.

obtained with crude apparatus and faulty technic), the presence of medullated nerve fibers within the retina does not necessarily cause a corresponding increase in the size and shape of the blind spot of Mariotte.

This conclusion is strengthened by the anatomically proved presence of the retinal light perceiving elements under the layer of medullated nerve fibers (quoted in the first paragraph of this article). In order that these elements may function, it is necessary that sufficient light penetrate the layer of opaque nerve fibers to stimulate the end organs. The amount of such necessary light is small, as the work of various investigators in dark adaptation has shown and it is probable that sufficient penetrates to produce vision. Qualitative vision does not come into question, because, as Sulzer [25] has shown, vision at the inner margin of the blind spot is only 1/22 of normal, while at the outer margin, it is still further reduced to 1/45 of normal. Therefore, the amount of light that penetrates the layer of medullated fibers may be sufficient to stimulate the end organs of light perception, but may be insufficient to penetrate the translucent nerve fiber layer and be reflected back from the retina again through the layer, in an amount large enough to stimulate the retina of the observer. This would account for the variation in visibility of blood vessels lying within the layer of medullated nerve fibers. In the majority of cases, the medullation becomes thinner in two dimensions as the peripheral edges of the mass of medullated nerve fibers is approached. This has been shown by three different methods: Schmidt-Rimpler [9] in the anatomic investigation; Langenham [11] in the ophthalmodiaphanoscopic transillumination, and Koeppe [12] in the microscopy of the living fundus with his modification of the Gullstrand slit lamp. The point where the thinning is sufficient to allow the light rays to penetrate to the underlying light perceiving elements of the retina cannot be determined in the living eye except by a careful delineation of the blind spot.

CONCLUSIONS

1. Medullated nerve fibers in the retina adjacent to the disk, as a rule, cause an enlargement of the blind spot.

2. The enlargement of the blind spot found in such cases seldom corresponds in size or shape to the ophthalmoscopic picture of the medullated area.

3. The disparity between the size and shape of the blind spot and the ophthalmoscopic picture of the mass of medullated nerve fibers indicates that medullated nerve fibers within the retina are not opaque to incident light for the entire length of the medullation and that the degree of opacity cannot be deduced from the ophthalmoscopic picture.

4. In such cases, the enlargement of the blind spot indicates merely the amount of retinal area that is prevented from functioning by the presence of overlying medullated nerve fibers in a layer sufficiently thick to occlude incidental light.

5. The term "opaque nerve fibers" is a misnomer and should be discarded for the proper term "medullated nerve fibers." [26]

22 East Washington Street.

25. Sulzer: Encyclopedie française d'opht. **3**, 1904.

26. In addition to the references already given, the following will be found of interest:
Gradle: Ann. Ophth., October, 1915; Ann. Ophth. **25**:740 (Oct.) 1916; Development of the Human Eye, American Encyclopedia of Ophthalmology **5**.
Manz: Arch. f. Augenh. **29**, 1894.

ABSTRACT OF DISCUSSION

Dr. William Zentmayer, Philadelphia: The priority for the invention of a tangential magnet scotometer, the device which was used in the present study, belongs to Dr. Gradle, because recently almost precisely the same method of mapping out scotomas was described, presumably as original, by a Dutch ophthalmologist who evidently was unfamiliar with Dr. Gradle's work. The findings in the studies of this retinal condition of M. Landolt having been confirmed by Klecewski, Leber, Ginsberg, Hoeg and Gradle, it would seem to be definitely settled that no conclusion can be drawn from the ophthalmoscopic appearances as to what the size and shape of the blind spot will be in the presence of medullated nerve fibers in the retina. Salzman states that medullation is completed at the latest within three weks of birth, and believes that light favors the development of the medullary sheath. Babies that were born prematurely and have lived for some time show further advanced sheath development than fetuses of the same age which have remained in utero. In the light of this, it causes no surprise to learn that the percipient elements of the retina are found beneath, and their presence therefore affords no theoretical basis for conclusion in this study. It is evident that light must penetrate to the percipient elements, and this would explain the nonconformance of the anatomic and physiologic facts in a given case. I have seen three cases with very extensive medullated nerve fibers in the retina, in all of which there were a high ametropia and amblyopia. In 1913, Ginsberg reported a case in which there were three patches, none in juxtaposition with the papilla. Vision was normal, and no scotoma could be demonstrated. The same year Hoeg studied the visual fields in this condition and found that the enlargement of the blind spot was not so great as to correspond with the area of the patch, and stated that evidently considerable light penetrated to the precipient layer of the retina. In discussion, Rönne stated that this was also the case with white exudates in the retina. According to von Hippel and Oppenheim, cases of medullated fibers in the retina occur relatively frequent along with other stigmas of degeneration in psychically abnormal people. The only clinical significance of the findings of Dr. Gradle that occurs to me is the presence of this condition in a case of suspected sinus disease. No doubt "medullated nerve fibers in the retina" is the better term for this condition. However, as to the observer the unaffected portion of the retina is transparent and the medullated portion is largely opaque white, the result of reflection of light without sensible absorption of the visible rays of the spectrum, and as the term "opaque nerve fibers" was evidently applied from the point of view of the observer, it can scarcely be termed a misnomer and is not without descriptive value.

Dr. Harry S. Gradle, Chicago: In regard to the age at which the condition of medullated fibers is found: Von Hippel reported that the earliest case he was able to find in the literature was that of a child, aged 2½ years. Previous to that it does not seem to have been recorded at any time. There have been reported several cases of disappearance of the medullated fibers in conjunction with disturbances in the optic nerve. In the cases that I have had, the refraction has been practically normal.

Cancer at Madrid.—L. Lasbennes gives in the *Medicina Ibera* **15**:47, 1921, a statistical study of the mortality from malignant disease at Madrid during the last twenty years. From 0.803 per thousand inhabitants in 1900 it has steadily increased to 1.164 in 1920. The women outnumbered the men in every one of the twenty years, but the cancer of the digestive tract in both sexes has shown a much greater increase than the cases of cancer of the genital organs. The mortality from pulmonary tuberculosis shows a constant rate of sixty men for each forty women, while sixty women die from cancer to forty men. In his own experience, cancer of the larynx occurred almost exclusively in men. If this should prove to be the fact elsewhere, he says, it might suggest the possibility of organotherapy and prophylaxis.

VAGINAL CYSTS

CLARENCE B. INGRAHAM, M.D.

DENVER

Vaginal cysts have received frequent consideration in medical literature. Stokes, Cullen,[1] Breisky,[2] Winkel,[3] Freund,[4] Veit,[5] Gebhard[6] and Bandler[7] have written important articles on this subject.

Small cysts in the vagina are unusual; a large cyst is rare. One large cyst and two small ones having come under my observation, I take this opportunity to report them.

Vaginal cysts undoubtedly originate from different sources; from inclusions of vaginal epithelium, from vaginal glands, persistent embryonic structures, possibly from urethral epithelium. It is often difficult or impossible to determine their origin. A cyst, originally lined by squamous epithelium, may undergo changes, many layers of cells being reduced to a single layer with the characteristics of a cuboidal cell.

A probable form of vaginal cyst is one that develops from inclusions of vaginal epithelium, crypts or folds adhering as a result of vaginitis, not uncommon in the young. Such an adhesive vaginitis may result from general systemic infections, from a highly irritating discharge, or from the ulceration of a foreign body.

The commonest form of cyst is the inclusion cyst found near the introitus. They are small and result from the inclusion of islands of squamous epithelium in the healing of perineal lacerations or during the repair of a relaxed vaginal outlet.

Such cysts occur in the posterior or lower lateral wall, often in scar tissue. They are relatively small, varying in size from that of a pea to that of a hazelnut, usually single, and yellowish, or whitish, if larger. They are filled with a friable, sebaceous material resembling pus, and representing masses of degenerated exfoliated epithelium, detritus, fat droplets and cholesterin crystals. If large, the contents may be a clear fluid. Their walls, from 2 to 4 mm. thick, are of fibrous tissue lined by from two to thirty layers of squamous epithelium, usually thicker at one point than at another. The superficial cells are often devoid of nuclei and filled with vacuoles. The deepest layer is most often cuboidal.

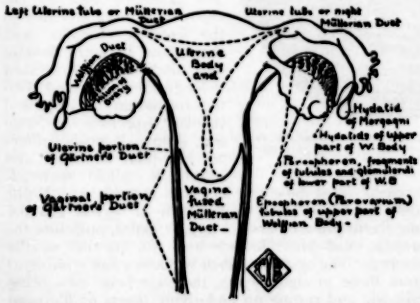

Left Uterine Tube or Müllerian Duct
Uterine Tube or right Müllerian Duct
Wolffian Duct
Uterine Body and
Hydatid of Morgagni
Hydatids of upper part of W. Body
Uterine portion of Gärtner's Duct
Paroophoron, fragments of tubules and glomerulus of lower part of W.B
Vaginal portion of Gärtner's Duct
Vagina
Fused Müllerian Duct
Epoophoron (Parovarium) tubules of upper part of Wolffian Body

Fig. 1.—Relation of epoophoron, paroophoron, wolffian duct and Gärtner's duct, through their course in the broad ligament, cervix and vagina.

Such a cyst, usually painless, occasionally causes a disagreeable irritation or vaginismus. The treatment is enucleation.

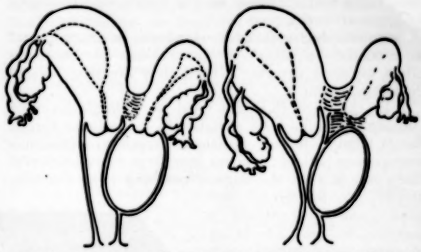


Fig. 2.—On the left, double uterus with cervicer communicating with a fully developed vagina, and a rudimentary vagina. The blind vagina is converted into a cyst by the accumulation of menstrual secretion. On the left, the small rudimentary uterus has no communication with its corresponding vagina which through accumulation of secretion has formed a müllerian duct or vaginal cyst.

It is generally believed that there are normally no glands in the vagina. Preuschen,[8] in 1877, however, carefully made sections of thirty-six vaginas, and found definite vaginal glands in four. The necks of the glands were of squamous epithelium; the deeper portions were lined by cylindric epithelium in which cilia were detected. Hennig had described similar glands in 1870. Meyer[9] found glandular formations in newborn infants, which on consolidation of the excretory ducts could develop into small cysts. Cullen ascribed vaginal glands as the source of three and possibly a fourth cyst in his series of cases. His careful histologic study seems to substantiate this origin. They are small cysts lined by a cuboidal or almost flat epithelium. The cavity is partly filled with mucus, with no evidence of degenerative changes.

Cysts having as their origin fetal remains, Gärtner's duct, may assume quite large proportions. They have been described as being as large as the fetal head. Klein[10] was able to follow the wolffian ducts in a newborn infant and in an older child from the cervix to the hymen. The ducts may persist as either short segments or, as in a few instances, from the parovarium to the uterus, running alongside, or through the masculature of, the uterus in the substance of the cervix and along the lateral vaginal wall, or in the anterior portion on either side of the urethra to the hymen. Some observers believe Skene's glands to be the ends of Gärtner's ducts.

Gärtner's duct has an inner lining of one layer of cuboidal or cylindric epithelium. Its outer covering is of fibrous tissue with a middle zone of nonstriped muscle, arranged longitudinally, transversely or running in both directions.

1. Cullen: Vaginal Cysts, Bull. Johns Hopkins Hosp., June, 1905.
2. Breisky: Cysten der Scheide, Stuttgart, Pittra and Billroth **55**: 131, 1879.
3. Winkel: Die Scheidencysten, Lehrbuch der Frauenkrankheiten, Leipzig, 1886, p. 153; Ueber die Cysten der Scheide, Arch. f. Gynäk. **2**: 383-413, 1871.
4. Freund: Beiträge zur Pathologie des doppelten Genitalkanals, Ztschr. f. Geburtsh. u. Gynäk. **1**: 231, 1877. Echinococci, Gynäk. Klin., Strassbourg **1**: 321, 1885.
5. Veit: Handbuch der Gynäkologie **1**, 1897.
6. Gebhard, C.: Cysten der Vagina. Pathologische Anatomie der weiblichen Sexualorgane, Leipzig, 1899, p. 535.
7. Bandler; S. W.: Gynecological Pathology, Abel and Bandler, 1901, p. 206.
8. Preuschen: Ueber Cystenbildung in der Vagina, Virchows Arch. f. path. Anat. **70**: 111, 1877.
9. Meyer, R.: Atlas der normalen Histologie, der weiblichen Geschlechtsorgane, Leipzig, J. A. Barth, 1912, p. 97.
10. Klein: Lehrbuch der Gynäkologie, Otto Küstner, 1910, p. 98.

Cysts arising from Gärtner's duct are most common along the anterior vaginal wall just to one side of the urethra, or on the lateral vaginal wall. They are sessile, rarely pedunculated, usually oblong. They may show at one end rudiments of the undilated duct; they are single, or there may be two or more following the course of the duct. The cyst may be small or like the one here reported, it may extend from the introitus to the vault of the vagina. Cysts have been reported which dissect upward between the layers of the broad ligament, or a parovarian cyst may dissect its way downward and encroach on the lumen of the vagina (vaginoparovarial cysts).

Gärtner's duct cysts grow slowly, as in my case, and as reported by others, pregnancy has a stimulating effect on their growth. Often they are first noticed during gestation.

Like the duct, they are lined by a single layer of cuboidal epithelial cells, occasionally cylindric or almost flat (Cullen). Robert T. Frank [11] reported a case in a multiparous patient in whom four large cysts developed along one side of the vagina, reaching from the skin deeply into the broad ligament, and necessitated a cesarean section. The lining of these cysts varied from low cuboidal, ciliated columnar, to a stratified transitional epithelium. The large cysts showed no epithelium; the smaller ones showed the variations reported. No derivation, excepting the wolffian duct, he states, is plausible, and so he makes the statement that different types of epithelium from a columnar to stratified epithelium exist in Gärtner's duct cysts.

Meyer [9] states that "Gärtner's duct in the vagina and hymen shows a varied epithelium, single layers, or double and multiple layers; cylindrical, cuboidal, and large squamous cells are occasionally found." The cysts may have squamous epithelium with stretches of cylindric epithelium between.

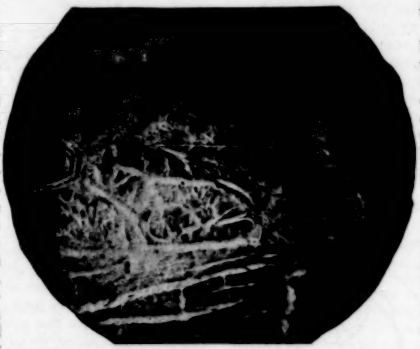


Fig. 3.—Low power photomicrograph, showing columnar epithelial lining of cyst. The muscle belongs to a portion of anterior vaginal wall removed with the cyst.

Gärtner's duct cysts contain a mucinous material, either colorless or straw colored, or after injury, brownish or reddened semifluid material, from blood pigment.

The walls are thin, usually not more than 0.5 mm. in thickness, and are composed of fibrous tissue with nonstriped muscle cells intermingled. These are difficult to make out in the larger cysts.

Freund,[4] in 1877, first described the type of vaginal cyst resulting from an accumulation of fluid in a rudimentary vagina or Müller's duct. It is remembered that in fetal life, Müller's ducts fuse to form the uterus and vagina. Fusion may fail to occur and a double uterus and double vagina result.

Two forms of defective development occur which may give rise to Müllerian duct cysts. In the first, a well-developed horn communicates with an apparently normal vagina; the other horn is rudimentary, takes no part in menstruation and has no communication with its corresponding vagina. This incomplete vagina accumulates fluid and forms a cystic tumor in the lateral wall of the normal vagina.

In the other type, there is the well-developed horn communicating with its corresponding vagina, while the rudimentary horn is sufficiently well developed to give off menstrual fluid which communicates with a rudimentary vagina below. This vagina has no communication with the normal vagina or with the exterior. It becomes filled with a chocolate colored fluid. It is not a true cyst. Tension may cause it to break into the well formed vagina, or becoming infected, it may form a large abscess.

The removal of such cysts occasionally causes serious surgical difficulty. They are often treated by incision and removal of the intervening septum, incorporating the cyst into the vagina.

Graves [12] reports a case in which the septum between the two vaginae had become the seat of a great plexus of vaginal veins, so that an attempt to remove the septum and connect the two vaginae into a single canal could not be carried out, hysterectomy with drainage of the infected cyst through the abdomen and vagina eventually dried up the cavity.

Cullen considers the possibility of vaginal cysts developing from the urethral (Littré's) glands. Such cysts are rare, if they ever occur. In two of his cases, the similar histologic picture led to the belief that such might be their origin.

The urethra and vagina are intimately associated. The posterior wall of the urethra is firmly attached to the anterior vaginal wall throughout its entire length. The mucosa of the urethra is longitudinally folded with the formation of club and tubular depressions. Some are simple lacunae, others are glandular in nature and secrete a colloid material. Lacunae form the entire length of the urethra. While some are broad based and open by a narrow channel into the urethra, others are large, tubular, push into the propria, and often branch and run parallel to the urethra. The cysts described by Cullen had a lining of from three to eight layers, the superficial cells being cylindric and resting on underlying layers of flattened and deeply staining cells, the general arrangement being that of the lining of the urethra.

Dilatations arising from the urethra should not be confused with vaginal cysts. Probably most cysts of this type originate as periurethral abscesses, and pressure will usually cause such a cyst to empty itself through the urethra.

"Occasionally, a small cystic prominence may be met with in the lateral vaginal wall, on opening which there is an escape of urine with a resultant urinary fistula. This is an embryologic abnormality. Brödel and others have pointed out that when there is a double kidney on one side, the ureter from the lower kidney is ordinarily implanted into the normal site, while that of the upper

11. Frank, R. T.: Am. J. Obst. 72: 467, 1915.

12. Graves, W. P.: Text Book of Gynecology, Ed. 2, Philadelphia, W. B. Saunders Company, 1918, p. 299.

kidney is carried down further by the wolffian duct, and inserted more medialward and nearer the urethral orifice. Were this ureter carried a little lower, the blind pouch described in the vagina would be accounted for." Such an abnormality should be kept in mind when a small cystic protrusion is encountered in the lateral part of the vagina.

Fig. 4.—Gärtner's duct cyst (author's case).

Dermoid cysts have been encountered developing in the rectovaginal septum. In countries where the echinococcus is prevalent, cases of echinococcus cysts of the vagina are reported.[4] Cysts arising from Skene's glands must be considered under vaginal cysts.

A rare condition is colpohyperplasia cystica, described first by Winckel.[3] Small cavities filled with clear fluid or gas, and forming elevations, appear on the vaginal mucosa. Lindenthal[13] states that it is a condition due to infection with *Bacillus aerogenes-capsulatus*. Others have demonstrated this organism, while Jaeger[14] has produced the cysts experimentally in animals. Though not amenable to treatment during pregnancy, when the disease usually makes its appearance, it usually disappears spontaneously after childbirth.

REPORT OF CASES

The two small cysts were both inclusion cysts, and followed perineal lacerations. They occurred in scar tissue near the vaginal orifice. One measured 1 by 1 cm. and was encountered while doing a perineal repair. The other was removed under cocain in the office. It was described as the size and shape of a bean.

The description of both corresponds to that given for inclusion cysts, and they were filled with white sebaceous material.

The large cyst occurred in a primipara, 23 years of age. In the fifth month of pregnancy, there was a feeling of pressure in the vagina, and a month later a protrusion, resembling a large cystocele, appeared.

It has been said that vaginal cysts grow slowly, and it is often the case that they do not make their appearance until during a pregnancy, when they fill rapidly. This cyst by the seventh month was the size of a goose egg, extended into the vault of the vagina, was sessile, with the anterior vaginal wall rather lax over the cyst.

When the patient went into labor at term, the cyst was tapped, and so collapsed as not to interfere with the birth, which was normal.

About six weeks after labor, the cyst had refilled, was not so large as during pregnancy, but protruded on walking, was annoying and for temporary relief was aspirated.

When the child was 4 months old, I removed the cyst. It extended from the vulva up into the left vaginal fornix and was the size of a goose egg. The cyst, thin walled, was attached between the anterior vaginal wall, urethra and bladder throughout the length of the vagina. It dissected away easily. The anterior vaginal wall was brought together after removing some of its redundancy, as in a cystocele operation. Its description follows.

The vaginal cyst was elliptic and measured 5.5 by 3 by 3 cm. (the dimensions here given are smaller than the size in situ, as the cyst had been partly aspirated and preserved in liquid formaldehyde. The wall was 1 mm. thick and had a smooth inner surface. Its contents were a colorless mucoid substance.

Microscopic Examination: The outside of the wall is lined by the vaginal squamous epithelium under which is a layer of loose connective tissue with a fairly rich blood supply, and a well developed layer of muscular tissue. The cyst has a thin capsule made up of fibrous tissue; no muscle cells are seen. The lining of the cyst is a single layer of columnar epithelium; no cilia are demonstrated (Dr. Philip Hillkowitz).

Metropolitan Building.

13. Lindenthal: Aetiologie der Kolpohyperplasia cystica, Wien. med. Wchnschr., 1897, Nos. 1, 2
14. Jaeger: Das Intestinalemphysem der Suiden, Arch. f. Tierheilk. 32: 425, 1906.

INJURIOUS COMBINED EFFECT OF ROENTGEN RAYS OR RADIUM, AND TOPICAL REMEDIES

GEORGE M. MacKEE, M.D.
AND
GEORGE C. ANDREWS, M.D.
NEW YORK

Now that roentgen rays are widely employed in diagnosis and therapy and radium is used extensively as a remedial agent, it is essential that physicians, even those who do not employ these agents, be cognizant of the dangers associated with the topical application in strength of irritating remedies to parts that have been or are to be irradiated. The injurious possibilities of such combined treatment does not appear to be appreciated by the majority of the medical profession. Want of knowledge and judgment in this

Fig. 1 (Case 2).—Scars resulting from application of solid carbon dioxid following roentgen-ray treatment for keloid.

respect has been the cause of severe and even serious injury to the skin and subcutaneous tissue, and when such injury occurs, the blame is erroneously placed on the roentgen or radium treatment.

HYPERSENSITIVENESS CAUSED BY ROENTGEN RAYS AND RADIUM

Irradiation, whether or not followed by visible reaction, increases the sensitiveness of the skin to stimulating, irritating and caustic agents. The degree of hypersensitiveness depends on the dose of roentgen rays or radium, or on the amount of injury, temporary or permanent, microscopic or macroscopic, and on the time interval between the irradiation and the application of topical remedies. The strength and character of the local remedies and the manner of their application also are important factors.

Small doses of roentgen rays or radium, combined with topical irritants in strength, may result in severe injury. Large, but perfectly safe, doses of roentgen rays or radium, combined with mild topical irritants, may give the same result. Intensive and reactive irradiation, associated with topical irritants in strength, is the combination most likely to effect injurious results.

Fig. 2 (Case 8).—Third degree radiodermatitis due to application of irritating chemicals to the skin following two erythema doses of roentgen rays.

Hypersensitiveness is very marked immediately subsequent to a single intensive dose of roentgen rays or radium. The return to normal is probably in accord with biologic laws, and, in the absence of visible reaction (erythema) or of permanent injury, the skin will react normally to topical remedies in one month. If there has been a first degree radiodermatitis,[1] manifested by erythema, but no permanent injury, the skin is likely to remain hypersensitive for one month after the disappearance of the erythema. This may be two or three months subsequent to the treatment.

If there is permanent injury as evidenced by telangiectasia, atrophy or scarring, the skin may remain hypersensitive for months and even years.

Fractional irradiation is cumulative in effect, and the degree of skin hypersensitiveness will depend on the size of the individual doses and the interval between the applications. After several fractional doses, at intervals of a week or less, the effect is much the same as that following one large dose.

HYPERSENSITIVENESS CAUSED BY TOPICAL APPLICATIONS

The topical application of stimulants, irritants and caustics makes the skin hypersensitive to irradiation. The degree of hypersensitiveness depends on the strength of, and the method of applying, the topical remedy; also on the time interval between the application of the topical remedy and the irradiation.

The length of time that skin may remain hypersensitive varies with the strength of the topical remedy and the manner in which it is applied. Usually the skin will react normally to roentgen rays and radium one month after topical applications have been discontinued, provided such applications have not produced a severe reaction. In instances of reactions (inflammation, ulceration), the skin is likely to remain hypersensitive for one month subsequent to subsidence of reaction or healing of ulceration.

REMEDIES THAT ENHANCE THE EFFECT OF IRRADIATION

Any drug, chemical, remedy, or agent that is capable of effecting an inflammatory reaction in the skin may make the latter more susceptible to irradiation.

Chrysarobin, scarlet R medicinal, iodin, mercury, pyrogallic acid, cantharides, resorcin, betanaphthol, tar, iodoform, sulphur, salicylic acid and remedies of this type effect hypersensitiveness of the skin. They cause the least trouble when used as powders; they are more potent in solution, and most potent in the form of ointments. We have known a 1 per cent. ointment of chrysarobin, a 3 per cent. ointment of iodin and a 5 per cent. ointment of ammoniated mercury (all considered mild ointments) markedly to interfere with roentgen treatment. Used in a strength of 10 per cent. (the usual strength), any of these remedies are capable of causing serious injuries to the skin when applied during, or very soon before or after intensive irradiation.

Caustics, such as sodium hydroxid or potassium hydroxid, acid nitrate of mercury, zinc chlorid, trichloracetic acid, nitric acid, silver nitrate, etc., all may enhance irradiation effects.

Ultraviolet light (sunlight; Kromayer lamp; Alpine lamp) especially if applied to the point of visible reaction, may enhance the effect of roentgen rays and radium.

Refrigeration (carbon dioxid snow; liquid air) must be used with great caution on irradiated skin. We have seen deep, very slowly healing ulcers follow a five second application of carbon dioxid snow with firm pressure in skin that had been permanently injured by roentgen rays two years previously.

Prolonged applications of heat or cold, and friction, especially if combined with liniments, may enhance irradiation effects.

1. Radiodermatitis is a term applied to reactions occasioned by both roentgen rays and radium.

V. 7 1921

Galewsky[2] reports the occurrence of a circumscribed, red, slightly scaly dermatitis on the chest of a patient who had been subjected to several roentgen-ray examinations for pulmonary tuberculosis. The eruption covered a rectangular area and appeared three weeks subsequent to the last irradiation. The patient had been receiving numerous neo-silver arsphenamin injections. Clinically, the exanthem resembled an arsphenamin dermatitis more than a roentgen dermatitis. One week after its appearance, a universal arsphenamin dermatitis became manifest. It presented the same picture as the rectangular area preceding it. There was a generalized erythema with small and large lamellated scales, slight hyperkeratosis of the palms and soles, and marked exfoliation of the skin of the face and head. It is possible that the irradiation established a locus minoris resistentiae in which the arsphenamin dermatitis prematurely appeared, demonstrating a changed susceptibility of the skin to allergic phenomena.

CLINICAL FEATURES

The combined effect of irradiation and topical stimulants, irritants or caustics, produces a reaction that is, as a rule, indistinguishable clinically and pathologically from radiodermatitis. The reaction may be of the first, second or third degree, and the sequelae are those of true radiodermatitis.

The subjoined illustrative case reports will enable the reader to visualize some of the results of combined treatment.

ILLUSTRATIVE CASE REPORTS

CASE 1.—*History.*—A woman had a roentgenographic examination of the nasal accessory sinuses. Two exposures were made, the radiation entering the head at the occiput. Three weeks later, the hair fell out, but there was no erythema. Three applications of tincture of iodin were then made to the affected part of the scalp, at daily intervals. The result was ulceration of the treated area, intense pain, and permanent alopecia. Three months were required for cicatrization.

Comment.—If the injury were due entirely to the roentgen rays, erythema would have preceded the alopecia. Roentgen alopecia resulting from a single exposure or numerous exposures over a period of a few weeks and unaccompanied by a visible reaction, such as erythema, is temporary. In this instance, the scalp had received an epilation dose of filtered radiation. If the iodin had not been applied, there would have been no ulceration and the hair would have regrown in two or three months.

The epilating dose for scalp hair is well established and is used daily in the management of tinea tonsurans and tinea favosa of the scalp. In such treatment, the thing we always fear is that the patient may deny the use of irritating applications previous to the irradiation, or that such applications may be made subsequent to the roentgen treatment, in spite of advice to the contrary.

CASE 2.—*History.*—A young girl had received roentgen treatment for keloid. The treatment was administered years ago, when it was considered harmless to roentgenize until a mild reaction ensued. The keloid disappeared, but there was some telangiectasia as a sequel to the roentgen reactions. A year after the irradiation, solid carbon dioxid was applied, with firm pressure for five seconds to each of seven dime-sized areas. The result was necrosis that involved the entire derma, subcutaneous tissue and, to a slight extent, the underlying muscular tissue. Healing was very slow, several months being required for cicatrization. The resulting scars were more disfiguring than was either the original keloid or the telangiectasia (Fig 1).

Comment.—In this instance the five-second application of solid carbon dioxid caused greater destruction than is usual with an application of one minute. The ulcers in cases of this kind, so far observed, do not resemble third degree radiodermatitis. Pusey and others have called attention to the hypersensitiveness of the so-called "roentgen-ray skin" to solid carbon dioxid treatment.

CASE 3.—A man had received fractional radium applications to ten small patches of psoriasis. One week after the last treatment, a 10 per cent. chrysarobin ointment was applied to three of the lesions. Within a period of twenty-four hours, there was a violent reaction in the areas to which the chrysarobin had been applied. The reaction exhibited all the characteristics of a second-degree radiodermatitis, including subsequent atrophy. There was no reaction in parts treated with radium alone or with chrysarobin alone.

CASE 4.—A patient with confluent, inflammatory psoriasis of the palms and soles received erythema doses of roentgen rays to the affected parts, at monthly intervals, for three months. The palms, soles and dorsal surfaces of the hands received the same amount of irradiation. There was a slight first degree reaction after each application. The eruption underwent involution subsequent to the first treatment, but immediately relapsed. The second and third treatments were of no benefit. Three weeks after the last exposure, the patient soaked gauze in a mixture of equal parts of castor oil, balsam of Peru and cade oil and wrapped the hands in the gauze upon retiring. He was awakened during the night by a burning sensation, whereupon more of the mixture was added to the bandages. An hour or two later, the burning pain being very intense, the bandages were removed and it was noticed that the hands were red and swollen. The patient was seen the next day, at which time the hands were markedly swollen, tense and painful. The edema was cutaneous and subcutaneous. The skin was erythematous, but there was no vesiculation, excoriation nor ulceration. The symptoms endured for several weeks. The feet, which had received the same amount of radiation but to which the mixture had not been applied, remained normal. The patient was seen two years later, at which time he received roentgen-ray treatment for pruritus ani. The skin of the palms was slightly atrophic and dry, and there were a few dilated capillaries. The soles were normal.

CASE 5.—An epithelioma situated in the right eyebrow region of a woman was given one application of roentgen rays, consisting of 2 Holzknecht units at skin distance. This was followed by a mild second-degree reaction which healed in a month. Two months after the treatment, a single application of a 10 per cent. ointment of ammoniated mercury was followed within a few hours by erythema, burning pain and superficial edema. The inflammation subsided in two weeks. The same ointment when applied to another part of the body failed to provoke a reaction.

CASE 6.—A woman received three erythema doses of filtered roentgen rays to the breast, at intervals of six weeks. Each application consisted of 2½ Holzknecht units at skin distance, filtered through 3 mm. of aluminum. Each treatment was followed by a first-degree reaction. Three months after the last irradiation, the skin showed slight atrophy and loss of hair. An ointment containing 4 per cent. salicylic acid, 10 per cent. cade oil and 10 per cent. ammoniated mercury was applied to the affected part. After two or three applications the skin became inflamed, but use of the ointment was continued. In less than two weeks, a very painful, indolent ulcer resulted. The ulcer was indistinguishable from a third-degree radiodermatitis. It healed in six months. The end-result was scarring, atrophy and telangiectasia.

CASE 7.—A woman with psoriasis was referred by the late Dr. George T. Jackson for roentgenization. Dr. Jackson had directed the patient to apply a 2 per cent. chrysarobin ointment to the lesions of the left arm. Only the lesions on the right arm were to receive roentgen-ray treatment. The lesions of both arms were given three-fourths Holzknecht unit at skin distance. The lesions that received both roentgen rays and chysarobin reacted vigorously: erythema, edema and vesiculation; the others disappeared without reaction.

CASE 8.—Mr. J. W., referred by Dr. H. M. Kalvin of Brooklyn, had a sarcomatous nodule on the flexor surface of the right forearm and two similar nodules in the right pop-

2. Galewsky, E.: Dermat. Wchnschr. 73:817 (Aug. 6) 1921.

liteal space. Each area (lesions and considerable normal skin) was given roentgen rays, the dose being 2½ Holzknecht units at skin distance, filtered through 3 mm. of aluminum. This was followed by a first-degree reaction, which subsided in two weeks. The lesions were much improved. One month after the first treatment, the same dose was again administered to each area. This treatment was followed by a first-degree reaction. The patient applied ointments containing compound solution of cresol, balsam of Peru and scarlet R medicinal to the popliteal space but not to the arm. The erythema of the arm soon disappeared. The area in the popliteal space became intensely red, hard and painful. The patient suffered excruciating pain for four months. The hardened area proved to be dry necrosis. The necrosed tissue turned into a slough in four months and began to separate. At the end of six months, there was an ulcer that involved the subcutaneous tissue and even the muscle. At the present writing, one year subsequent to the treatment, the ulcer is about one fourth its original size. The diagnosis is a third degree radiodermatitis due to the application of irritating chemicals to skin that had received two erythema doses of roentgen rays (Fig. 2).

In addition to the illustrative cases reported herewith, selected from a mass of clinical material, the opinions given in this communication have been verified experimentally.

CONCLUSIONS

Roentgen rays and radium may make the skin hypersensitive to stimulating, irritating and caustic agents locally applied. As a rule, the skin will react normally to topical remedies in a month; but if there has been a reaction, the hypersensitiveness may endure for several months, and if the skin has been permanently injured, the hypersensitiveness may be detected for a year or two, or even indefinitely.

Stimulating, irritating and caustic remedies, when locally applied, produce hypersensitiveness to roentgen rays and radium for about a month. If the skin reacted to the local remedy, increased "radiosensitiveness" is the rule for one month after the complete disappearance of the reaction.

A physician about to prescribe topical applications of an irritating nature should first ascertain whether the parts to be so treated have been recently irradiated or are to be irradiated.

A physician about to apply roentgen rays or radium to a patient should first ascertain whether irritating topical remedies have been recently used; and the patient should be cautioned against additional local treatment without the knowledge and consent of the physician who applied the roentgen rays or radium.

The Italian Institute for Social Relief.—Prof. Ettore Levi, of the chair of neuropathology in the University of Florence, member of the national board of public health and vice president of the board in charge of war invalids, has organized a central institute for study of the problems affecting the social and economic welfare of the nation, especially the social diseases and their economic results, and legislative and financial means for prevention and relief, serving also as a center of propaganda, and for consultation for preventive and relief work in commercial and industrial organizations, and for study and experiment of new types of social work, such as vocational laboratories; training schools for social workers, etc. The institute is financed mainly by a private firm in Genoa, and has the collaboration and support of the principal banks of Italy promised for a term of three years. A pamphlet by Professor Levi, entitled "Social Medicine in Defence of Life and Labor," was what started the organization of the institution, as he portrayed the need of some central body to coordinate and promote the efforts to heal the ills of the social and economic system of the present day. The address is Corso d'Italia 32 A, Rome.

MAGNESIUM SULPHATE SOLUTION AS AN AID IN ANESTHESIA*

ARTHUR H. CURTIS, M.D.
CHICAGO

Some years ago Meltzer studied the anesthesia produced in dogs by subcutaneous injections of magnesium salts. In his experiments large amounts of magnesium salt solution were necessary to produce complete anesthesia.

Recently, Gwathmey[1] has advocated preoperative hypodermoclysis of from 200 to 400 c.c. of a 4 per cent. chemically pure magnesium sulphate solution as an aid to nitrous oxid-oxygen or ether anesthesia. This solution is given one and one-half hours before operation, within a period of not less than thirty minutes. Gwathmey states that magnesium sulphate has no deleterious effect on any of the tissues or organs of the body.

Because of the greatly decreased postoperative nausea and distress reported to accompany this method of anesthesia, we tested the value of magnesium sulphate solution at the time of operation on ten patients who occupied ward beds in St. Luke's Hospital. In all of these ten patients less than the usual amount of nitrous oxid-oxygen or ether was required. Postoperative symptoms were slight; it was particularly noted that pain and vomiting were almost entirely absent.

This favorable preliminary evidence encouraged the routine use of the method. Unfortunately, one of the next three patients operated on died after sixty hours with symptoms of acute poisoning.

REPORT OF CASE

A well nourished woman, aged 35, married, complained of persistent abdominal pain and pelvic discomfort, following a pelvic operation nine years before. Examination revealed a fibromyoma of the uterus and evidence of lower abdominal adhesions. The urine contained a few hyaline casts. On the morning of operation, during a period of thirty-five minutes, the patient received a hypodermoclysis of 310 c.c. of 4 per cent. chemically pure magnesium sulphate solution. This solution was prepared from the salt used in making the solutions injected into the other two patients operated on the same day. Two hypodermics of one-eighth grain (8 mg.) of morphin preceded the nitrous oxid-oxygen anesthesia. The opened abdomen revealed a fibromyoma of the uterus and massive pelvic adhesions. Despite adhesions, the operation was not particularly difficult, and was completed in an hour.

The patient rested comfortably for six hours. Thereafter she was distressed by persistent nausea and repeated vomiting of small amounts. There was a gradual increase in the pulse rate and moderate elevation of the temperature. The abdomen became moderately distended, but gas and feces were freely expelled. Gastric lavage failed to relieve the symptoms. Urine was satisfactorily voided for eighteen hours; then it became very scanty, was deeply stained with bile, and contained many hyaline and granular casts. After forty-eight hours there was a pronounced jaundice; the pulse was 158; temperature, 102.8 F.; leukocytes, 16,000; breathing labored, but not notably accelerated. Death occurred twelve hours later, after a period of marked prostration.

A postmortem examination by Dr. Edwin F. Hirsch demonstrated a marked jaundice, marked acute fatty changes of the liver, marked cloudy swelling of the parenchymatous organs, multiple petechial hemorrhages of the pleura, pericardium and endocardium, a recent surgically repaired supravaginal hysterectomy, and other changes unrelated to the cause of death. The head was not examined. There was no peritoneal infection. The lining of the stomach and bowel was unchanged.

* From the Pathological Laboratory and Gynecological Service of St. Luke's Hospital.

1. Gwathmey, J. T.: Current Progress in the Science and Practice of Anesthesia, J. A. M. A. 77: 421 (Aug. 6) 1921.

Cultures of the heart's blood and pericardial fluid, grown both aerobically and anaerobically, were sterile after incubation. Histologically, the liver cells contained many fat vacuoles. The cytoplasm and nuclei failed to stain as deeply as normal tissue, and all the changes present were such as have been observed in liver tissue when death has resulted from an anesthetic. The renal epithelium was similarly changed.

Chemical analysis of the liver tissue revealed no trace of the heavy metals and no phosphorus; the magnesium content of the liver after deducting the amount normally present in human liver represented 5.33 gm. of $MgSO_4 \cdot 7H_2O$.

COMMENT

Because of the clinical symptoms and the changes found postmortem, the death of this patient could not be ascribed to any cause other than the anesthetic. Nitrous oxid-oxygen anesthesia is not known to produce the liver and kidney changes observed, and the evidence seems to point to magnesium sulphate as the noxious agent. That magnesium sulphate injections are not without effect in the body tissues is known from observation on lower animals that such injections produce a hyperglycemia and glycosuria.[2] Some of these observations [3] were made with solutions of no greater concentration of magnesium sulphate than fourth molar (3 per cent.).

Further analysis of hyperglycemia [4] associates this phenomenon with alterations in the p_H concentration (acidosis) of the liver tissue. It seems, therefore, that magnesium sulphate produces changes in the liver which cause a hyperglycemia or glycosuria, and when more profound liver changes are produced it is not impossible that severe tissue injury occurs.

CONCLUSIONS

1. Preliminary hypodermoclysis of magnesium sulphate solution usually lessens the requisite amount of other general anesthetic, and greatly relieves postoperative distress.

2. Study of the fatal case here reported, together with evidence from previous experimentation on animals, indicates that magnesium sulphate solution sometimes produces profound changes in the liver and cannot be considered a safe anesthetic for general use.

104 South Michigan Avenue.

STUDIES IN BLOOD FAT

PRELIMINARY REPORT *

DAVID MURRAY COWIE, M.D.
AND
LYNNE A. HOAG, M.D.
ANN ARBOR, MICH.

The total lipoid content of human blood under several varying conditions was studied by the method advocated by Bloor, making use of the modifications and suggestions published by Gray. All recorded observations were made on human blood, a total of about 400 specimens having been examined. All single specimens and controls for series were taken before breakfast, following an overnight fast of fourteen hours. No attempt was made to separate the total lipoid content of the blood into its chief partitions—fatty acids, neutral fat, cholesterol, cholesterol esters and lecithin.

Even a brief experience with the method showed that the unavoidable yellow color of the sodium ethylate which was used to saponify the unknown, and not the standard, introduced a very real error into the nephelometric comparisons between the soap suspensions of the two. This could be obviated to a great extent by treating both solutions with sodium ethylate, except that the presence of any color, although in equal amounts, is not in accord with the principles of relative density readings as conducted in a nephelometer. The method now advocated by Bloor is the use of a small quantity of strong sodium hydroxid solution obtained by collecting the drippings from pure metallic sodium exposed to the atmospheric moisture.

In thirty determinations on children who were in the hospital because of fractures, clubfoot or other nonmedical conditions, no significant variation in the average total lipoid content was found in an age series from 3 to 11 years. The average figure was about 0.7 per cent. As has been pointed out by all other workers with this method, there is an occasional marked variation.

Following fourteen hours of starvation, weighed amounts of fat, in the form of analyzed cream, were fed to five normal children. A control was obtained from each before the ingestion, and a blood sample was taken every one or two hours thereafter, for from ten to twelve hours. The absorption-utilization curves thus obtained showed the maximum amount of lipoids in the blood from the fifth to the seventh hour after ingestion, thus corroborating results of Bloor on dogs. Three adults tested in a similar manner showed the maximum blood stream content at the sixth hour. This absorption-utilization curve was changed when the fat was given together with a large amount of sugar or carbohydrate, in that the highest point was reached at the second hour in the three adults examined.

The fat absorption-utilization curve of an adult diabetic patient was studied following the ingestion of 143 gm. of fat, 6 gm. of carbohydrate and 16 gm. of protein in a single meal. The maximum concentration in the blood was reached at the sixth and eighth hours, showing however, a rise of only 10 per cent. over the first hour after ingestion. A boy, aged 11 years, with diabetes, showed at the eighth hour a 26 per cent. increase over the first hour, following ingestion of 90 gm. of fat, 14 gm. of protein and 11 gm. of carbohydrate. These results show no gross variation from the normal curves.

All the eight diabetic patients examined showed an increase of total lipoids, the highest being 8.8 per cent. When these patients were fed a minimum of carbohydrate and protein, but large amounts of fat, ranging from 100 to 220 gm. daily, and furnishing an adequate caloric intake for the individual, the lipoid content of the blood steadily decreased. The patient whose case is cited above had 8.8 per cent. on entrance, which was reduced to 1.5 per cent. before he was discharged from the hospital on a diet containing 220 gm. of fat.

Starvation produced a 182 per cent. increase in total blood lipoids in four days in a 7 year old boy, accompanied by the acidosis picture of diabetes. Another patient showed a 64 per cent. increase in three days of starvation, and this was also accompanied by marked acidosis. The lipoids of the blood rapidly decreased

2. Meltzer, S. J., and Auer, J.: Physiological and Pharmacological Studies of Magnesium Salts, Am. J. Physiol. **14**: 366, 1905. Underhill, F. P., and Closson, O. E.: Am. J. Physiol. **15**: 321, 1906.
3. Kleiner, I. S., and Meltzer, S. J.: J. Biol. Chem. **20**: 24, 1916.
4. Langfeldt, E.: Blood Sugar Regulation, III, J. Biol. Chem. **46**: 403 (April) 1921.

* Read by title at the American Society for Clinical Investigation, Atlantic City, N. J., May 9, 1921.

† From the Department of Pediatrics and Infectious Diseases, University of Michigan Medical School.

when the patients were given a diet high in fat and low in carbohydrate and protein.

The blood fat content was analyzed at two-hour intervals following the intravenous injection of foreign protein, using dead typhoid bacilli. The subjects were deprived of their meals throughout the test, which covered a period of one day. As a control, the blood of one of the patients was examined at the same intervals during a fast day on which no foreign protein was administered. Following the injection of dead typhoid bacilli (500 million), this patient showed a decrease of total blood lipoids of 50 per cent. on one occasion and 34 per cent. at another time, the lowest point being reached in five hours, the fat rising again thereafter in spite of continued fasting. On the fast day, the same child showed only a 12 per cent. decrease in eight hours, with no tendency to rise at the end of this period. The second case showed no fall in blood lipoids following foreign protein during the first series, and only 10 per cent. decrease during eight hours in the second series; this was no more than could apparently be accounted for by the fasting. This patient did not show as marked a temperature reaction as did the first patient.

320 South Division Street—608 Hill Street.

Clinical Notes, Suggestions, and New Instruments

RECOVERY AFTER HYSTERECTOMY FOR CARCINOMA OF THE FUNDUS UTERI

REPORT OF CASE IN WHICH RADIUM HAD BEEN USED UNDER THE DIAGNOSIS OF FIBROID *

ASTLEY P. C. ASHHURST, M.D., AND C. Y. WHITE, M.D., PHILADELPHIA

History.—Lucy M., aged 52 years, unmarried, weight 43 kg. (95 pounds), height 160 cm. (5 feet, 4 inches), was admitted to the Episcopal Hospital, under the care of one of us (A. P. C. A.) Nov. 6, 1920. The family history was negative. She had had the usual diseases of childhood but had been in fair general health until twenty years ago, when she suffered a "nervous breakdown," and since that time she had been an invalid, though she had not had any serious illness. Her heaviest weight had been 47.5 kg. (105 pounds). The present illness began about three years ago, when menstrual disturbances first appeared. Menstruation, which commenced at 15 years of age, was regular up to three years ago, and though at times painful, the bleeding always had been moderate in quantity, and had lasted only four or five days. In March, 1918, however, she began having uterine hemorrhages; and after three or four months of bleeding, she was admitted to the Cooper Hospital in Camden, N. J., where the uterus was curetted. (Inquiry at this hospital in May, 1921, as to whether any pathologic examination was made of the tissue obtained, was answered thus by Dr. Thomas B. Lee:

"The report of the examination of the scrapings, I will give you verbatim: 'Chronic hyperplastic endometritis. There is a great excess of glandular substance, the interglandular tissue being almost absent in some areas; but there is no evidence of malignancy at present. Frank B. Lynch, Jr., M.D.'")

The hemorrhage stopped for a few months, but then commenced again. In June, 1919, she was under the care of an experienced gynecologist, who made a diagnosis of uterine myoma, and who gave her radium treatment. There was not sufficient tissue obtained at this time by curettage for microscopic study. No bleeding occurred after this until March, 1920, a free interval of eight months. Since March, 1920 (eight months previous to admission to the Episcopal Hospital), she had been bleeding almost continuously, in small quantities; there had been a constant vaginal discharge, and she had been more of an invalid than previously.

April 8, 1920, the same surgeon who had made the radium application amputated the left breast. His preoperative diagnosis was "chronic cystic mastitis"; but microscopic study showed the tumor to be a fibro-adenoma. The patient had noticed this tumor only about a month before the operation; but it seemed to grow rapidly, and was the size of a small egg when removed. She did not recuperate well from this operation.

She spent the summer of 1920 at the seashore, in the hope that the bleeding and discharge would stop, with an improvement in her general health. She gained in weight from 43 to 47.5 kg. (95 to 105 pounds) while away, and was in comparatively good health for her. She was able to do a little tutoring, being transported to and from her place of employment in her employer's automobile. A week after her return home, she was again admitted to a hospital, in October, 1920. During the three weeks she remained there, she lost all the weight she had gained during the summer. She was then transferred to the Episcopal Hospital, the sole reason for her transfer being a financial one, as the board of managers of the latter hospital generously placed a private room at her disposal gratis. Indeed, the superintendent of the hospital was given to understand by those seeking her admission that hers was "a hopeless case" and that she could not live more than a few weeks.

The physician under whose care she had been from June, 1919, to October, 1920, and who was consulted by one of us (A. P. C. A.), confirmed by telephone conversation the essential points of the above history, and gave the additional information that the uterine cavity, which measured 9 cm. (3½ inches) in June, 1919, was smaller in September, 1919, after the radium treatment. When asked what was his objection to performing hysterectomy in the case of this patient, he replied he considered it unnecessary, as further radium treatment should prove curative, and instanced as an additional reason the patient's poor recuperative power. He considered her a poor operative risk.

Examination.—On admission to the Episcopal Hospital, Nov. 6, 1920, the patient was frail, worried looking, rather anemic and very thin, presenting the appearance typical of a neurasthenic. She was very emotional, and anticipated death as the only relief from her suffering, which she alleged to be great.

Urinalysis was negative except for hyaline and light granular casts. The quantity, up to the time of the hysterectomy, varied from 300 to 1,000 c.c. (10 to 32 ounces) daily. After operation, it varied from 500 to 1,300 c.c. (16 to 44 ounces) daily. A phenolsulphonephthalein test before operation showed excretion of 15 per cent. during the first hour, and of 5 per cent. during the second hour: total 20 per cent. Blood examination showed red blood cells, numbering 4,520,000, white blood cells, 11,240 (polymorphonuclears, 70 per cent.; lymphocytes, 20 per cent.). Fluoroscopic examination of the gastro-intestinal tract by Dr. Bromer was negative except for moderate gastroptosis and coloptosis. Vaginal examination disclosed a moderately enlarged but freely movable uterus, with constant slight bleeding. The cervix felt normal.

Dr. M. H. Fussell saw the patient in consultation, and furnished these notes: "The thyroid is somewhat enlarged. There is considerable muscular tremor. The heart dulness extends to the right edge of the sternum, and to the left midclavicular line. At the aortic area is a systolic murmur; over the body of the heart is a systolic murmur which is conducted to the axilla. There is no arrhythmia, no diastolic or presystolic murmur. Lifting the arm above the head does not lessen the impulse of the radial pulse." Dr. Fussell advised against any operation on account of the condition of the patient's heart; unless it should be the introduction of a radium tube which could be done under a brief nitrous oxid anesthesia.

In spite of these unfavorable opinions, it was believed by one of us (A. P. C. A.) that the patient would withstand a hysterectomy under general anesthesia; and from his own examination of her heart he believed ether would be preferable to gas, even in spite of the apparently precarious condition of the patient's kidneys. Therefore, she was advised to have the uterus removed for these reasons: She was an

* Read before the College of Physicians of Philadelphia, June 1, 1921.

elderly, unmarried woman, with a diseased uterus (the preoperative diagnosis was fibroid uterus), who had been treated by radium with only temporary benefit, and who was steadily losing ground. She was no longer in a condition for temporizing, but required radical treatment to insure removal of the disease. Though radium treatment might sometimes be justifiable in the case of a comparatively young woman with myomatous uterus, certainly, in older women hysterectomy afforded a more certain and, therefore, a more desirable remedy.

Operation.—Under ether anesthesia, Nov. 26, 1920, three weeks after the patient's admission, the abdomen was opened by a left paramedian incision, 18 cm. in length. The omentum was adherent at one point to the anterior parietal peritoneum; but this adhesion was not disturbed, nor was the appendix vermiformis removed, as any prolongation of the operation was deemed inadvisable. The uterus, which was about twice its natural size, was free from adhesions, and presented a mass just posterior to the fundus. The fundus was grasped with volsella, and the uterus was drawn into the wound, the remainder of the peritoneal cavity being excluded by gauze pads. The volsella tore partly out of the fundus (which was then entirely outside the abdominal wound), disclosing a gray, friable and malignant looking uterine wall. The uterus, with its cervix, was removed; but the tubes and ovaries were left, as it was not desired to increase the patient's neurasthenia by precipitating the menopause. The stumps of the round and broad ligaments were implanted into the vaginal vault, which was closed with interrupted chromic gut sutures. The abdominal wound was closed in layers without drainage.

Result.—The patient stood the operation without any unfavorable symptoms referable to the heart or kidneys, and except for nausea and occasional vomiting, prolonged for a period of two days, made an uneventful recovery. She left her bed twenty-five days after operation, and before her discharge from the hospital, Jan. 15, 1921, she had learned that she could walk up and down stairs and take strolls about the hospital grounds. Her weight on discharge was 44.5 kg. (98 pounds).

Since returning to her home, she has been able to resume the normal life of a woman of her age and station. She reported in May, 1921 (six months after hysterectomy), looking the picture of health, and said that she felt perfectly well, weighed more than 49 kg. (108 pounds), and was about to accept a situation as governess.

Pathologic Report on the Uterus.—Gross Appearance: The uterus is about twice its normal size: its weight is 78 gm. and its dimensions 9 by 8 by 5 cm. It presents a tumor at the fundus, involving the posterior more than the anterior wall. The outer surface of the uterus is smooth, with the exception of the site of its normal attachments, which have been removed by operation. The thickness of the wall at the site of the tumor is 25 mm.; that of the unaffected uterine wall is 17 mm. This thickening is due not only to the growth on the mucous surface but also to involvement of the muscular wall in the tumor. The uterine wall does not show any evidence of fibromas.

On the mucous surface of the uterus, the tumor extends from the fundus on the posterior wall to a point 30 mm. from the internal os, and on the anterior wall to a point 55 mm. from the internal os. The dimensions of the tumor on the mucous surface of the uterus are 45 mm. on the posterior wall, and 20 mm. on the anterior wall. The mucous surface of the tumor is ulcerated, and this ulceration is deep in some areas, showing undoubted evidence of necrosis. The endometrium over the tumor is generally roughened, with folded cauliflower-like projections. The membrane elsewhere is injected, and the tumor mass is friable.

Microscopic: The growth is typical of adenocarcinoma. It infiltrates into the muscular wall in all directions with the formation of large pockets of carcinomatous tissue. It shows no evidences of treatment (by radium), there being no increase of fibrous or cicatrizing tissue.

Diagnosis: Adenocarcinoma.

2104 Spruce Street—Episcopal Hospital.

A NEW NEEDLE FOR COLLECTING BLOOD FOR SEROLOGIC TESTS

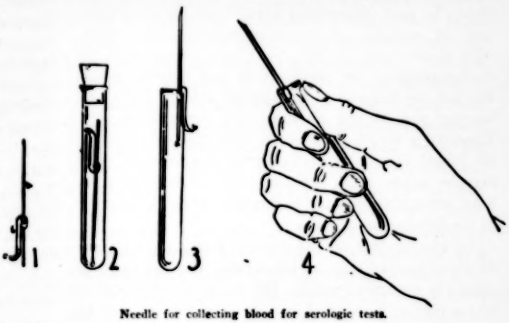
S. A. PETROFF, TRUDEAU N. Y.

For the last seven years we have been in search of a needle and a method of collecting blood for serologic purposes, a needle that would be practical for private physicians, hospitals and laboratories. The needle here described is simple in construction, inexpensive, and durable enough to be used repeatedly.

The construction of the needle is shown in the accompanying illustrations:

Figure 1: *a*, a hollow nickel-plated steel needle, 3 inches (75 mm.) long, of an ordinary caliber from 19 to 25 gage; a slightly concave clip, 1¼ inches (32 mm.) long, ¼ inch (6 mm.) wide and 1/64 inch (0.4 mm.) in thickness; *b*, the upper end is fastened to the needle about 1½ inches (38 mm.) from the blunt end. The clip runs approximately parallel to the needle, the distance from the upper end being ⅛ inch (3 mm.) and the lower end about 1/16 inch (1.5 mm.); *c*, the lower end of the clip is turned upward so as to provide a rest for the index finger.

Figure 2: After the needle is cleaned and sharpened, a wire may be run into the needle from the sharp end. The needle is then inverted into a round-bottomed centrifuge tube



Needle for collecting blood for serologic tests.

with the clip toward the mouth of the tube, corked and sterilized in a dry air sterilizer at 150 C. for half an hour.

Figure 3: The needle is so constructed that it may be attached easily and very firmly to a straight-mouthed centrifuge (test) tube, with the clip (*b*) outside and the lower half of the needle (*a*) inside.

Figure 4: When ready to use the needle, one should remove the cork very carefully, tip the tube in the palm of the left hand, draw out the needle without touching the mouth of the tube, and attach to the tube as previously described. Apply a tourniquet above the elbow (bent) and introduce the needle into the median basilic vein. No suction is necessary.

The advantages of this needle are: (*a*) its simplicity; (*b*) The ease with which it may be sterilized and kept in a sterile condition until used; (*c*) the convenience of drawing the blood into a tube which may be used also for centrifuging, so that it is not necessary to transfer the blood after coagulation into another tube; (*d*) the ease and firmness with which the needle may be attached to the test tube while in operation, and (*e*) durability.

Normal Living.—The parents who appreciate and keep a comfortable, orderly home often have a narrow vision, yet it may be the result of lack of opportunity or proper guidance, and not of dogged, ignorant self-assurance; and while even the latter may unbend and accept a new gospel, the former constitute fertile soil in which to plant and train up ideas of normal healthy living and thinking.—M. Webb, *Hospital Social Service* **4**:139 (Sept.) 1921.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - - Chicago, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Six dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading matter

SATURDAY, NOVEMBER 5, 1921

THE BEHAVIOR OF PHOSPHATES IN THE BODY

The behavior of phosphates in the organism is far from being clearly understood. The conditions which determine their rôle in metabolism are unusually complex. In part, phosphates arise from the disintegration of organic phosphorus-containing compounds, such as the casein of milk, the vitellin of egg yolk, the nucleoproteins, the phosphatids and phytin, which liberate the element as phosphoric acid in the body; another part of the phosphates is ingested as such. Phosphates may be eliminated from the body through the bowel as well as in the urine; furthermore, they may be deposited in the formation or restitution of bone structures, or may experience synthetic disposal in the production of milk.

To what extent the therapeutic regulation of some of these factors may be important, it is too early to prophesy with any finality. When calcium is abundant in the diet or is secreted into the bowel, there may be opportunity for the formation of the insoluble calcium phosphate which is a component of the feces. Under normal conditions of health and diet, nine tenths of the calcium in the stools may be combined as insoluble phosphate. Obviously, if phosphates are then diverted away from the circulation, conditions may arise wherein they cannot participate in the formation of bone. The problem of rickets and osteoporosis is thus approached. Again, the failure of the kidneys to excrete acid phosphates adequately may lead to a type of acidosis;[1] for the renal elimination of phosphates represents one of the most important normal mechanisms for maintaining the neutrality of the blood. High phosphatemia is said to bring about a reduction in the calcium content of the blood with a possible unfavorable influence on the irritability of the nervous tissues.[2] Finally, the occurrence of phosphaturia, often baffling and difficult to manage with its incidence of undesirable calculi, represents a still different phase of the varied problems represented by the phosphates.

Despite the conflicting opinions, there is at present sufficient evidence to make it probable that the calcium factor in the food plays an important part in determining to what extent phosphates can be absorbed. When there is a great abundance of calcium and magnesium in the intake, earthy phosphates are most likely to appear in abundance in the excrement. Recently, Telfer[3] has shown at the Royal Hospital for Sick Children in Glasgow that under conditions in which other compounds than phosphates reacting with calcium arise in the intestine the release, so to speak, of phosphoric acid for absorption may become quite noteworthy. He has studied the metabolism of infants in whom the existence of congenital atresia of the bile ducts has resulted in the failure of absorption of the fatty acids arising in the digestion of fats in the alimentary tract. A similar effect can be observed in obstructive jaundice. The nonabsorption and persistence of an excess of fatty acids in the intestine are associated with a modification of the normal excretion of calcium and phosphorus. The calcium is found in the feces as soaps in large excess over the normal. The phosphorus, which normally is excreted by the bowel as tricalcium phosphate, is liberated from combination with calcium and is absorbed and eliminated by the urine. The degree to which the normal excretion of calcium and phosphorus can thus be varied is shown to depend on the concentration of the free fatty acids in the intestinal contents. This is evidently one of many ways in which the perplexing interrelations between two elements essential for the organism can be influenced, as several investigators have previously pointed out.

1. Marriott, W. M., and Howland, John: Phosphate Retention as a Factor in the Production of Acidosis in Nephritis, Arch. Int. Med. **18**: 708 (Nov.) 1916.
2. Wells, H. G.: Chemical Pathology, 1920, p. 656.
3. Telfer, S. V.: The Influence of Free Fatty Acids in the Intestinal Contents on the Excretion of Calcium and Phosphorus, Biochem. J. **15**: 347, 1921.

UREA AND UREMIA

Uremia is the name that has been given to disturbances in cases of renal disease which appear to be of a toxic character and which not infrequently prove fatal. The designation, as it is still employed, undoubtedly includes a group of symptoms—nervous, alimentary, circulatory and respiratory—having a varied origin. As Garrod pointed out, the boundaries of the syndrome are somewhat ill defined, and whereas some authorities would limit the application of the term uremia to functional disturbances which appear to have a toxic origin, others would extend its signification so as to include a number of anatomic lesions, such as ulceration of the stomach and intestine, stomatitis and pericarditis, while others again regard as minor uremic phenomena the cardiovascular changes which play so conspicuous a part in chronic renal disease.

Even the more obviously toxic manifestations in nephritis need not be, and probably are not, due to a single cause. Foremost among the different theories of uremia is the retention hypothesis, which assumes that the symptoms are the outcome of a failure in the

excretion of substances which should normally be eliminated by the kidney. This is the so-called uremia vera.[1] The manifestations have also been attributed, by some writers, not to a retention of substances formed in normal metabolism but to abnormal toxic substances arising as a result of perverted metabolism during kidney disease.[2] There are undoubtedly occasional patients manifesting uremic symptoms without any unusual accumulation of nonprotein nitrogen—an index of insufficient renal function—in the blood. To ascribe these to the presence of some unusual toxic substances liberated in the organism is little more than an interesting guess.

In the majority of the cases, uremic manifestations are actually associated with a decided rise in the nonprotein nitrogen of the blood, that is, with real retention of nitrogenous catabolites. Whereas the blood of healthy persons shows a nonprotein nitrogen content of between 25 and 40 mg. per hundred cubic centimeters, approximately 50 per cent. being in the form of urea, in uremia the figures may increase to more than 400 mg., with a urea content of 70 per cent. or more. It does not follow that urea is the most toxic of the retained catabolites, for the modern analytic studies in blood chemistry have clearly demonstrated that uric acid, creatinin, indican, and doubtless other compounds ordinarily excreted with readiness, may be among the retention products. It is conceivable, indeed, that the clinical picture might vary with variations in the comparative retention of the different known nitrogenous constituents. Nevertheless, urea is so conspicuous in relative quantity that attention almost inevitably becomes focused upon it.

So far as judgment could be based on experimental evidence, urea has generally been regarded as a relatively nontoxic substance. Very large doses, equivalent to 1 per cent. of the body weight, are required to produce severe manifestations in acute experiments. Urea is always distributed freely throughout the tissues to a certain extent, even in perfect health. However, Hewlett[3] and his co-workers observed that when sufficient urea is ingested to raise the content in the blood above 150 mg. per hundred cubic centimeters, disagreeable symptoms were invariably encountered. As the result of recent experimental investigations undertaken in the Department of Pathology at the University of Chicago, Leiter[4] has come to the conclusion that chronic uremia in man, ending ultimately in convulsions and coma, may be accounted for by urea intoxication, if we assume that the time element in the clinical cases is as important as the high concentration of urea in the animals, when injected. In Leiter's studies the injection of urea, intravenously, in dogs produced a train of symptoms entirely analogous to that found in the convulsive or true uremia in man. In the alimentary mucosa lesions were produced that may be related to uremic colitis. According to Leiter, there seems to be a rather definite correlation between the severity of the symptoms and the concentration of urea in the blood. One cannot study the new data presented without agreeing with their author that the retention of urea must play a much more important part than of an inert, harmless, waste product. Additional factors are doubtless often involved in retention uremia; but under certain conditions urea itself can doubtless produce untoward effects independent of the alleged presence of hypothetic uremic poisons as yet unidentified.

1. Strauss, H.: Die Nephritiden, Berlin, 1920, p. 139.
2. Hewlett, A. W.: Pathological Physiology of Internal Diseases, New York, 1916, p. 443.
3. Hewlett, A. W.; Gilbert, Q. O., and Wickett, A. D.: Toxic Effects of Urea, Arch. Int. Med. **18**: 636 (Nov.) 1916.
4. Leiter, Louis: Observations on the Relation of Urea to Uremia, Arch. Int. Med. **28**: 331 (Sept.) 1921.

TULAREMIA

The name tularemia has recently been proposed by members of the United States Public Health Service[1] to designate a specific infectious disease now recognized as due to *Bacterium tularense* and transmitted from rodents to man by the bite of an infected blood-sucking insect or by the handling of infected rodents. The disease, which is essentially confined to rural populations, is characterized by a fever of septic type, lasting from three to six weeks, followed by a slow convalescence. A number of cases have been reported from the Western states, the first one with fatal termination having been described as deer-fly fever by Francis[2] in 1919.

How widespread and serious this malady may prove to be remains to be seen. As has happened with some of the other insect-borne diseases, its importance as a cause of human disability may not be appreciated until the recognition of its characteristics becomes more widespread. Publicity has always been a potent factor in bringing to light forms of disease or an incidence not realized until attention to their possibilities was widespread. Thanks to the investigations of Francis[3] and his collaborators in the Public Health Service, much has been added to our knowledge of the means by which infection with *Bacterium tularense* may be brought about. It has seemed likely, at least for certain regions and months, that the disease is initiated by the bite of an insect, most probably the blood-sucking horsefly *Chrysops discalis*, which previously has bitten a jack rabbit infected with *Bacterium tularense*.

This micro-organism has been isolated during the same period from both jack rabbits and human cases in Utah, thus proving its coexistence in man and animals in one locality. Popular belief has connected human cases of the tularemia fever with the bites of a

1. Francis, E.: Tularaemia Francis, 1921, Pub. Health Rep. **36**: 1731 (July 29) 1921.
2. Francis, E.: Deer-Fly Fever: A Disease of Man of Hitherto Unknown Etiology, Pub. Health Rep. **34**: 2061 (Sept. 12) 1919.
3. Francis, E.: Tularaemia Francis 1921, I, The Occurrence of Tularaemia in Nature as a Disease of Man, Pub. Health Rep. **36**: 1731 (July 29) 1921. Francis, E., and Mayne B.: II, Experimental Transmission of Tularaemia by Flies of the Species Chrysops Discalis, ibid., p. 1738. Francis, E., and Lake, G. C.: III, Experimental Transmission of Tularaemia in Rabbits by the Rabbit Louse, Haemodipsus Ventricosus (Denny), ibid., p. 1747.

blood-sucking horsefly *Chrysops discalis* which seemed to be more prevalent in the infected than noninfected localities. Francis and Mayne [3] have given experimental substantiation to the supposition by the laboratory demonstration that this insect can actually transmit the infection with *Bacterium tularense* from animal to animal. Furthermore, the new experiments of Francis and Lake [3] have shown that the common rabbit louse *Haemodipsus ventricosus*, when taken from rabbits which have died with the typical lesions of tularemia and placed in the hair of healthy rabbits, causes the death of the latter with typical tularemia. The government experts see in this a practical importance in that it offers an explanation of the means by which the infection is kept alive throughout the year in the jack rabbits of Western states.

Although a few years ago the detection of the bacterial agents immediately responsible for diseases of an infectious nature was considered the foremost if not the sole problem of pathologic investigation, today we know that the identification of the microbic organism is usually only the beginning of the solution of a series of associated questions. The mode of transfer from one host to another must also be explained. Tularemia seems to offer an added instance to the increasing number of diseases in which entomology has furnished an essential key to the understanding of disease transmission.

THE ELECTIVE LOCALIZATION OF BACTERIA IN MUSCLE

So long as the cause of the symptoms commonly classed under the name of rheumatic myositis remains obscure, it cannot be amiss to present facts which may point to some tenable explanation of this group of maladies. In the end, therapy can never reach anything approaching an ideal stage until it is put on that rational basis which an understanding of etiology and function permits. There seems to be a growing belief not only that a microbic agent is primarily responsible for the manifestations of acute muscular rheumatism but also that the myalgias and milder forms of myositis have an analogous etiology. For the foci of the harmful bacterial activities, writers turn to the tonsils and teeth, partly, no doubt, in harmony with the current diagnostic customs. Rosenow and Ashby [1] of the Mayo Foundation have recently furnished new evidence to support the assumption that such chronic localized infections may actually play an important part in the production of both pronounced and mild forms of myositis. In many patients, improvement followed the removal of demonstrable foci.

But in addition to this indirect indication, streptococci removed from the foci in selected cases have shown a tendency to localize and produce lesions in the muscles when these micro-organisms were introduced into experimental animals. The location of the lesions in Rosenow and Ashby's experiments often approximated that noted in the corresponding patient. The streptococci from myositis do not differ greatly in morphology, cultural character, and staining reactions from those isolated in other diseases studied; and since even killed streptococci from myositis localized in muscles as did the live organisms, one must assume that some chemical property of the bacterial cells determines their elective localization. The Rochester bacteriologists thus indicate how bacteria having specific affinity for muscles have been demonstrated regularly in the foci of infection and, in some instances, on the free surface of mucous membranes and in excised muscles in cases of myositis in man. With these organisms the disease has been reproduced, the organisms isolated from the experimental lesions, and demonstrated in them, and myositis again produced on reinjection. The lesions in animals, in general, they add, corresponded in their severity and distribution to those present in the patient from whom the strains were isolated, and in that they were usually nonsuppurative in character. The number of lesions was often in proportion to the size of the dose. The conclusion, therefore, is drawn that myositis, including even the mild transient affections of muscles, is caused in the main by lodgment and growth of bacteria, usually streptococci, which have elective affinity for muscle tissue.

Evidence has also been secured as to why cure in these conditions is so difficult and why massage and applications of heat are such valuable agents in their treatment. The reaction in these very chronic conditions is not leukocytic, but mainly mononuclear and endothelial. The endothelial cells lining the small blood vessels become extremely swollen and proliferate; in consequence, the lumen of vessels, including arterioles, becomes partially or completely obstructed. Heat affects the vascular conditions so as to bring more oxygen, which is favorable to the nutrition of the muscular tissue and unfavorable to the growth of the streptococci.

1. Rosenow, E. C., and Ashby, Winifred: Focal Infection and Elective Localization in the Etiology of Myositis, Arch. Int. Med. **28**: 274 (Sept.) 1921.

CLINICAL LABORATORY SERVICE FOR PHYSICIANS

Laboratory methods now play a large part in the daily work of physicians. Chemical, morphologic, bacteriologic and serologic methods, as well as the roentgen ray, are in daily use everywhere, and new methods, for example, the electrocardiographic determinations and tests of metabolism, are being introduced. To meet the constantly growing needs for such methods, there have come into existence laboratories of health departments and of hospitals, with more or less differentiation into separate departments; also wholly private laboratories. The latter group includes those frequently referred to as commercial, because dependent on fees, and the individual establishments of physicians working alone or associated in groups. The old time pathol-

ogist, the prototype of the modern laboratory physician, whose function in clinical diagnosis was to determine the nature of lesions from gross and microscopic examination of tissues, has undergone differentiation into clinical chemist, clinical bacteriologist, clinical serologist, clinical microscopist, and roentgenologist, and there has come forth a formerly unknown adjunct to medical practice, the laboratory technician. So rapid has been the evolution of the clinical laboratory and the extension of laboratory methods in all fields of medicine, that frequently fear is voiced lest much work that should be done by physicians is being entrusted to incompetent substitutes.

Analyzing the situation, we must reckon first with the fact that the great majority of private practitioners for various reasons, lack of time being an important one, are prevented from making any but the simplest routine tests themselves. Therefore they must turn to some one for help, and the privately owned laboratories offer their services. That there has been an increasing demand for this form of laboratory service is evident from the number of laboratories that have sprung up and developed in recent years. Secondly, it appears that we shall be dependent on this kind of laboratory service for some time at least.

The laboratory features of the proposed health centers or of institutions financed and controlled by the community are attractive to many physicians and are idealistic. They represent a condition in which the same type of service would be rendered to all of the physicians in the community, the cost being reasonable and equally distributed. It might, however, be subject to the charge of representing a further intrusion by the state into medical activities. In any case, the commercial laboratory is an actual fact in our medical practice today. This being the case, the organization, methods and control of such laboratories should receive serious consideration. Physicians are responsible to their patients, i. e., the public, for the character of laboratory service supplied. The results of tests and examinations must be accurate; the fees for such tests must be equable. The conditions in some of these laboratories are such that thoroughly competent and well-trained physicians have been attracted by the work. It is desirable that similar conditions develop in all laboratories so that well-trained physicians, and not incompetent technicians, become responsible for laboratory service. These things can be achieved only by satisfactory control. Through this control the laboratories will be capable of rendering services of great value to the medical profession, and those institutions not rendering such service may be suppressed. Any effort whereby clinical laboratories are brought up to reasonable and fair standards is to be commended. As to the ideal method of control, there can be no difference of opinion; it should be the function of the organized medical profession.

Current Comment

THE MAGNETIC FIELD IS NOT A HEALTH HAZARD

Magnetism is a word before which the untutored stand aghast and with which the faker may conjure. Among the growing number of therapeutic projects constantly being brought to the attention of the American practitioner, "magnetotherapy" has not acquired any recognition, although it has actually received mention in medical literature. There are industries in which workmen may be exposed to magnetic fields of considerable strength in the course of the operations in which they are engaged; hence the problem of possible physiologic effects cannot be lightly brushed aside. Drinker and Thomson [1] of the Laboratory of Applied Physiology at the Harvard Medical School have recently conducted tests which, although the results are entirely negative in character, may serve to allay any fears about the intangible menace of large magnets to human welfare. None of their experiments on sensitive surviving tissues like muscles and nerves, on blood, or on intact animals gave the slightest evidence of physiologic effects from the magnetic field. Hence is should not be included among the health hazards.

ENDOCRINOLOGY AND PSEUDO-ENDOCRINOLOGY

Some of the current trends in endocrinology are discussed by Hoskins elsewhere [2] in this issue. He pleads for a greater degree of discrimination on the part of physicians in evaluating not only proffered data but also the various agencies either seeking support in, or exploiting, this field. The latter aspect of the situation deserves special emphasis. Those who purpose acting as purveyors to the medical profession must accept the status of purveyors. The only legitimate means by which they properly can aspire to success are skill in production and acumen in marketing. Equally well established is the principle that the physician or laboratory investigator in the medical sciences shall not exploit for commercial gain the results of his studies. These principles have long been maintained by the medical profession as a matter of good faith with their patients, to whom they owe protection from exploitation. THE JOURNAL is receiving from various parts of the United States letters commenting caustically on methods employed in a commercial campaign now being carried on by a "laboratory" purporting to specialize in endocrine products. The mail of physicians is flooded with a series of postcards, each card recommending and suggesting the use of the proprietary products of this self-styled laboratory for conditions ranging from eczema to epilepsy, and from obesity to tuberculosis. This gratuitous postal-card advice to physicians is reenforced by reference to "monographs" and a trade journal in which scientific medicine is systematically belittled as unpractical. Stripped of their pseudoscientific protective coloration, the "sug-

1. Drinker, C. K., and Thomson, R. M.: Does the Magnetic Field Constitute an Industrial Hazard? J. Indust. Hyg. 3:117 (Aug.) 1921.
2. Hoskins, R. G.: Some Current Trends in Endocrinology, page 1459.

gestions" are essentially pleas for gross commercial empiricism. The advertising campaign is ostensibly under the direction of the enterprising Mr. Hyde, the merchant of the firm. Mr. Hyde is a profound admirer of the eminent Dr. Jekyll, the medical director. Dr. Jekyll's principles of physiology are constantly extolled, though professional physiologists remain in ignorance of them. Dr. Jekyll, the pathologist, is cited as one speaking with authority, though one seeks in vain his name in the accepted literature of pathology. Dr. Jekyll, the pharmacologist and therapeutist, is much to the fore, though his work so far fails to appear in the reliable monographs and textbooks on these subjects. Reciprocating, Dr. Jekyll misses no opportunity to say a favorable word for the commercial products of Mr. Hyde. Unfortunately, the relation of endocrinology to sound therapeutics is still largely undetermined. The obligation that rests on competent therapeutic specialists to further work in this field is obvious. But until the truth is determined, common honesty as well as prudence demands circumspect discrimination.

PLACENTAL FUNCTIONS

The placenta evidently forms a mechanical barrier in the path of substances traveling between the parent and her offspring. Since the days of John and William Hunter it has been realized that the mother's blood never enters the fetus and also that the reverse phenomenon is impossible. Nevertheless, there is a fairly free exchange of certain products between the maternal and fetal organisms. Amino-acids, glucose and inorganic salts, as well as fetal waste products, penetrate the placental partition, which seems to behave like a semipermeable membrane toward them,[1] while such particulate forms of matter as the fats and lipoids are held in check by the placenta, so that there seems to be no direct interchange of such insoluble compounds. In view of the recent observations that various types of body cells seem, at least at times, to have the capacity to phagocytize minute particles, Wislocki [2] of the Johns Hopkins Medical School has reinvestigated the behavior of the placenta toward such forms of matter circulating in the blood stream. Certain so-called "vital dyes" like trypan blue can actually be retained by the cells of the placenta and fetal membranes; but the latter are incapable of absorbing and phagocytizing coarse, foreign particulate matter afloat in the blood stream. The limit of the size of particles which they are capable of accepting must lie somewhere between that of a coarse suspension, such as India ink, and an ultramicroscopic dispersion, such as trypan blue. Trypan blue, in turn, although absorbed by the chorionic epithelium and fetal membranes, is incapable of entering the fetal circulation as true solutions have been shown readily to do. In these experiments, then, the mechanistic hypothesis, according to which the placental partition assumes a purely passive rôle and behaves like a diffusion membrane, receives further support.

1. Slemons, J. M.: The Nutrition of the Fetus, Yale University Press, 1919.
2. Wislocki, G. B.: Observations on the Behavior of Carbon Granules Injected into Pregnant Animals, Anat. Rec. 21: 29 (April 20) 1921.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Charles H. Savage, Lieut., M. C., U. S. Army, has been transferred to the recruiting office, Birmingham, for the examination of navy recruits from Alabama.

ARKANSAS

Personal.—Dr. Aaron A. McKelvey, Fort Smith, has resigned as acting district health officer, and will be succeeded by Dr. Rufus L. Parks, Bonanza.

CALIFORNIA

Beauty Doctor Convicted.—Harriet Gunn, "beauty doctor" of San Francisco, was convicted, October 11, of violating the medical practice act.

Personal.—Dr. John C. Yates, San Diego, will succeed Dr. Alfred J. Scott, recently deceased, as a member of the state board of medical examiners.——Dr. Grundy E. McDonald, Long Beach, has been appointed city health officer to succeed Dr. Ralph L. Taylor.

Chiropractor Goes to Prison.—Mrs. C. L. Norval, a chiropractor of Red Bluff, was recently sentenced to pay a fine of $500 or spend 150 days in the county jail, following conviction on a charge of violating the medical practice act. She chose the jail sentence.

Physician Guilty of Failure to Report Case.—Dr. Edward C. Manning of Los Angeles is reported as having been found guilty of failure to report a case of diphtheria. October 8, he was fined $100 with the alternative of 100 days in jail. Sentence was suspended for two years.

Fined for Violation of Practice Act.—A report states that C. J. Mulkey was recently fined $500 in the superior court, Los Angeles County, for violation of the medical practice act. W. C. Cardew of San Jose, and J. F. Hayes and Wah Quack of Los Angeles are reported also to have been fined $100 each, following conviction on similar charges.

Health Survey of Stanford Students.—With the hope of bettering the health of students through a study of individual needs and the application of such exercises as should strengthen the weaknesses of each one, all students of Leland Stanford Jr. University, San Francisco, are being required to submit to examinations by the physicians of the physical department.

Hospital News.—Work is now being completed on the first two units of the Highland Hospital, the new Alameda County Hospital, Oakland, which has been delayed on account of labor trouble. The work represents an investment of $1,000,000. The hospital will ultimately cost between $2,500,000 and $3,000,000, and will have a capacity of 500 beds. ——St. Luke's Hospital, San Francisco, recently celebrated its fiftieth anniversary.

COLORADO

State Medical School and Hospital.—A campaign has been launched to raise $200,000 for the new state medical school and hospital. The plan is to get 200,000 people in the state to donate one dollar each to the fund.

Colorado Association Formed.—The Colorado Hospital Association was recently formed with the following officers: president, Dr. Richard W. Corwin, chief surgeon, Minnequa Hospital, Pueblo, and vice president, Dr. George W. Holden, Denver. Three meetings will be held annually, with 226 hospitals eligible for membership.

CONNECTICUT

Personal.—Dr. Gilbert T. Smith, Mansfield Depot, has been appointed chief surgeon of the steamship *Mount Carroll*, United American Lines, Inc., New York.

DISTRICT OF COLUMBIA

Housing Legislation.—A bill introduced by Senator Ball in the Senate is designed to prevent the construction of dwellings or homes in the alleys of the District of Columbia. Investigation shows that the total number of alley dwellings in Washington is 2,828. The measure is being urged in the interest of public health, comfort, morals and safety of the people.

Condemnation of Insanitary Homes.—According to a statement issued by the board for the condemnation of insanitary buildings, October 14, more than 100 residents of the district have been compelled to find other living quarters, owing to the fact that forty-three buildings in streets and forty-nine in alleys have been condemned and demolished. Seventy thousand dollars was expended in the clean-up campaign.

Act Incorporating Medical Society Amended.—An amendment to an act incorporating the Medical Society of the District of Columbia has been favorably reported to the Senate by the Senate Judiciary Committee. Under its former incorporation the medical society was restricted to an annual income of $6,000. The proposed amendment increases this income because the society has recently constructed a $125,000 building in Washington and needs more funds in order to operate it.

Personal.—Dr. August Pacini, Washington, was awarded the prize of $1,000 for research work in roentgen-ray experimentation by the American Roentgen Ray Society at their annual convention, held September 27-30, at Washington.——Dr. Ervin A. Peterson, director of the health service, American Red Cross, has resigned, his resignation taking effect October 15. He will take the position of director of the Cuyahoga County Public Health Association, Cleveland.——Dr. W. Cooke Lewis, comptroller of the American Red Cross, has resigned, his resignation taking effect October 1.——Dr. Henry Beeuwkes has been appointed director of medical relief for Russia. He will have charge of the distribution of supplies contributed by the American Red Cross.

GEORGIA

Personal.—Dr. Elmore C. Thrash, Atlanta, has been elected president of the Georgia Tuberculosis Association.——Dr. Elizabeth Bass Reed, U. S. Public Health Service, has been assigned to lecture to the women throughout the state of Georgia. Dr. Reed has recently returned from lecturing in Palestine.

HAWAII

Chaulmoogra Plantation.—To meet the demand for chaulmoogra oil the plantation in Honolulu has been enlarged by 4,000 trees so that an adequate supply may be furnished to be used in the treatment of leprosy in accordance with the method evolved by Dr. Arthur L. Dean, president of the University of Hawaii.

ILLINOIS

Better Community Conference.—The sixth annual Better Community meeting was held, October 13-16, at the University of Illinois, Urbana.

Public Health Exhibits.—The director of public health announces that, since July 1, more than 2,000,000 people have viewed the health exhibits of the state department of public health. The exhibit equipment is maintained in the loan service of the department and may be obtained by any community in Illinois without cost other than transportation charges one way and the local expenses. The material consists of models, motion picture films, posters, wall panels and special charts.

Personal.—Dr. Don B. Stewart, Chicago, has been appointed superintendent of the Ziegler Hospital, Ziegler, to succeed Dr. Leo V. Gates, who resigned, effective November 1, to accept the position of surgeon at the new Browning Hospital, DuQuoin.——The director of health has appointed Dr. Robert C. Bradley, Peoria, as district health officer in the division of communicable diseases.——At the twelfth annual meeting of the Illinois Tuberculosis Association, held, October 15-18, at Champaign, Dr. George Thomas Palmer, Springfield, was elected president of the association for the tenth consecutive time.

Chicago

Personal.—Dr. Leo Steiner, chief medical examiner of the Chicago Civil Service, has been appointed superintendent of the Illinois Charitable Eye and Ear Infirmary, to succeed Dr. Hiram J. Smith.

INDIANA

Hospital News.—It is announced that a new hospital for the treatment of disabled soldiers will be erected at Washington, at a cost of approximately $5,000,000.

Refusal of Gift for Tuberculosis Hospital.—The offer of Mr. and Mrs. David Esteb, Richmond, to give $50,000 toward a county tuberculosis hospital if the county would appropriate an equal sum, has been refused by the board of county commissioners.

IOWA

Clinical Meeting.—The Iowa State Clinical Medical Society held a meeting, October 14, at Cedar Rapids, under the presidency of Dr. Frank M. Fuller, Keokuk.

Personal.—Dr. John P. Savage, Sioux City, has been appointed chief of the medical service of the training center of the Bureau of Vocational Education at Silver Springs, N. D.——Dr. Thomas Bess has been appointed surgeon of the Iowa State Prison, Fort Madison, to succeed Dr. Austin Philpott who resigned after twenty years' service, owing to ill health, effective October 6.

KENTUCKY

Hospital News.—A new wing will be added to St. Antony's Hospital, Louisville, at a cost of between $150,000 and $175,000.——The Universal Mine Workers will erect a hospital at Madisonville at a cost of $1,000,000.

LOUISIANA

Personal.—Dr. George Walter has been appointed pathologist and roentgenologist at the St. Francis Sanatorium, Monroe, to succeed Dr. John Beals.

Campaign to Exterminate Ants.—A plan to destroy the Argentine ant in New Orleans, by placing cans of poisoned syrup at each city block, is now in progress. The work is under the direction of Ernest R. Barber, government entomologist, and will cost the city $25,000.

Health in Public Schools.—The New Orleans Council of Parents and Teachers held a meeting, October 20, in that city. Health problems in public schools were discussed by Dr. E. Moss, in charge of the department of hygiene and physical education, who spoke on how parents could cooperate in this.

MARYLAND

Personal.—Dr. Emil Heller Henning has been appointed health officer in the public school division of the Baltimore city health department, to succeed Dr. Ferdinand Reinhard, who resigned to take up Red Cross work in Czechoslovakia.

MASSACHUSETTS

Clinics for Mental Diseases.—At the second annual meeting of the Massachusetts Society for Mental Hygiene, held, October 20, at Boston, under the presidency of Dr. Charles Macfie Campbell, resolutions were made for a campaign against mental diseases on the same scale as tuberculosis and cancer is being fought, and that one clinic at least in each county should be established for the treatment of incipient mental disorders. Among the speakers were: Dr. S. Austin Fox Riggs, Stockbridge; Dr. Charles W. Eliot, president emeritus, Harvard University, and Dr. Frankwood E. Williams of the National Committee on Mental Hygiene, New York.

MICHIGAN

Hospital News.—It is announced that a hospital will be erected in Detroit at a cost of $193,000.

Laymen Told of Medical Achievements.—The first meeting of the publicity campaign organized by the medical men of Wayne County with a view to letting the laymen know what the profession is doing and has accomplished was held, October 13, at Detroit. Dr. Johnston B. Kennedy addressed the meeting and spoke of the serum treatment for rabies, tetanus and diphtheria.

Warning on Use of Roentgen-Ray Machines.—The manager of the David Whitney Building, Detroit, has issued the following notice to tenants owning roentgen-ray machines: "You are hereby requested to check up your roentgen-ray equipment and make certain that all dangerous rays cannot enter rooms of other tenants. We suggest that sheet lead one-eighth inch thick or its equivalent be used to confine the rays and protect other tenants from any possible injurious effects of rays penetrating to their offices."

MINNESOTA

Personal.—Dr. Harold Diehl has been appointed head of the health service of the University of Minnesota, Minneapolis, to succeed Dr. John Sundwall.——Dr. Arthur T. Caine, Anoka, has been appointed superintendent of the Anoka State Hospital.——Dr. Howard Weireck, Hibbing, has been appointed a member of the state board of health to succeed F. W. Cappelen.

MISSOURI

Hospital News.—The Sisters of St. Mary, St. Louis, plan to erect a seven-story hospital at Richmond Heights at a cost of $1,000,000.——The management of St. John's Hospital, Joplin, announces the purchase of 100 mg. of radium. St. John's has recently installed both pathologic and roentgen-ray laboratories and made extensive improvements in fireproofing the building.

Personal.—Dr. Andrew R. Snyder, Joplin, met with a serious accident on the evening of October 3. Dr. Snyder had just left St. John's Hospital following a dinner given to the staff, and attempted to crank his car. The car had been left in gear and started forward knocking the doctor down, dragging him about 30 feet, and coming to a stop only when it collided with another car that was passing. It was necessary to jack up Dr. Snyder's car in order to extricate him. His right arm and three ribs were fractured.

Appointments to State Institutions.—The nonpartisan board of control, in charge of the state eleemosynary institutions, has appointed the following: Dr. Marion O. Biggs, superintendent of the State Hospital No. 1, Fulton, reappointed; Dr. Porter E. Williams, superintendent at State Hospital No. 2, St. Joseph, reappointed: Dr. Ethan E. Brunner, Carrollton, superintendent at State Hospital No. 4, Framington; Dr. Moses H. Topping, Flat River, superintendent of the Colony for the Feeble-Minded and Epileptic, Marshall; Dr. James W. Bruton, Ozark, superintendent of Mount Vernon Sanatorium for Incipient Tuberculosis. Some of the appointees are Democrats and some of them are Republicans.

Chiropractors Convicted.—L. H. Schwenker and Edward A. Voight, two chiropractors at St. Louis, were convicted by juries for practicing medicine without a license, October 17, and fined $50 each. The St. Louis health department has begun an active campaign against these violators of the medical laws, and expects to arrest and prosecute many more of them. It is said that Voight is a registered dentist, but practices as a chiropractor. According to the testimony, he treated a boy for deafness and collected $63.75 for services, but refunded the money when the father of the boy declared there had been no improvement in the hearing. Schwenker admitted that he practiced as a chiropractor and exhibited a diploma from a chiropractic school.

NEW JERSEY

Questionnaires for Legislators.—The Medical Society of New Jersey is submitting questionnaires to legislative candidates, at the same time setting forth the contention "We have no propaganda and no selfish scheme." Among the questions are: "Will you favor the principle of uniform requirements for the license to practice healing from all who assume thereby uniform responsibilities in prevention, diagnosis and treatment of disease?" and "Do you favor the principle of publicity before enactment of all proposed health legislation, so as to afford equal opportunity for display of all facts, as well as opinions?"

NEW YORK

Personal.—Dr. Robert N. Halsey, New York, gave an address on "Heart Disease in Children and Its Treatment," at a meeting of the Wayne County Medical Society, held, October 18, at Detroit.——Dr. Charles H. Cole, Troy, has been appointed superintendent of the Broome County Tuberculosis Hospital, Chenango Bridge, effective October 1.——Dr. Charles W. Pilgrim, chairman of the state hospital commission, has handed his resignation to Governor Miller. The resignation will become effective, December 12.

New York City

Personal.—Dr. James Ramsay Hunt has been appointed consultant in neurology to the New York State Psychiatric Institute, Ward's Island.

Hospital News.—The New York Hospital Society, which received its charter from King George III, celebrated its one hundred and fiftieth anniversary, October 26.——Ground was broken, October 9, for the new Beth Israel Hospital. The hospital will be nonsectarian, with a capacity for 500 patients, and will be erected at a cost of $3,000,000.

Birth Control Conference.—A conference will be held, November 11-13, in New York, which will be the first American birth control conference. The discussions announced are to be on: (1) the question of population and its social aspect and (2) medical aspect, and practical methods to be discussed by authorized delegates. There will be a mass meeting, and organization of the American Birth Control League is proposed.

Scholarships at New York Post-Graduate Medical School.—The New York Post-Graduate Medical School and Hospital announces that there are now available several scholarships under the terms of the Oliver-Rea endowment. The purpose of the endowment is to further graduate medical education by awarding scholarships to practicing physicians of the United States. The scholarships vary in amount but are sufficient to defray in full or in part the tuition fees of the Post-Graduate Medical School for the courses offered. According to the wish of the donor, physicians in the state of Pennsylvania will receive preference in the award of these scholarships. Applications may be sent to the dean of the New York Post-Graduate Medical School and Hospital, Twentieth Street and Second Avenue.

Pay Clinic Opens.—A pay clinic has been opened at Cornell Medical College under the direction of the faculty of that institution. The clinic is designed to meet the needs of that large class of people who are unable to pay the regular fees of specialists and who are not objects of charity deserving of treatment in the free dispensaries. It is estimated that there are 2,000,000 such persons in the city. According to the announcement of the new clinic, the minimum fee will be $1 a visit. A diagnosis requiring laboratory investigation and group consultation will cost $10. A physical examination to find if any physical defects are present together with advice as to hygienic living will be given for $2.50. Prominent specialists are at the heads of the several departments. The physicians doing the work will receive compensation for their services.

NORTH CAROLINA

Personal.—Dr. Raymond V. Yokeley, Denton, has resigned as full-time health officer of Davidson County, and will be succeeded by Dr. David Russell Perry.

OHIO

Medical Meeting.—The one hundred and eighth semiannual meeting of the Union District Medical Association was held, October 27, at Oxford. Dr. Clarence J. Broeman, Cincinnati, gave an address on "Radium."

Physicians Oppose State Aid.—At the meeting of the Allen County Medical Society, held, October 19, at Lima, 150 physicians voted unanimously against the state medical aid plan which will be submitted to the voters in Ohio.

Physician Appointed to Diplomatic Corps.—Dr. J. M. Howell, Dayton, has been appointed diplomatic representative and consul general of the United States in Egypt. He has discontinued his practice of medicine and surgery after a duration of thirty-five years.

Distinguished Foreigner to Speak.—At the meeting of the Summit County Medical Society which will be held, November 8, at Akron, William A. Cochrane, M.B., F.R.C.S., Edinburgh, Scotland, Capt. R. A. M. A., will give an illustrated lecture on "The Treatment of Injuries of the Hand and Wrist."

Tuberculosis Clinics.—Tuberculosis clinics will be held in forty counties in the state under the auspices of the state health bureau in cooperation with the city health commissioners and specialists in chest diseases. Dr. Kennon Dunham, Cincinnati, Dr. Charles W. Waggoner and Dr. Louis A. Levison, Toledo, will be the diagnosticians and will give their reports to the local health officer who will be in charge of the clinic in each county.

Personal.—Col. Henry L. Gilchrist, M. C., U. S. Army, spoke, October 24, at the health exposition, Cincinnati. Dr. Gilchrist was sent to Poland in 1919 with 500 men and forty officers, with $5,000,000 worth of supplies to fight typhoid.——Dr. Harry H. Hines, Cincinnati, has resigned as professor of surgery at the University of Cincinnati, College of Medi-

cine, and from the staff of the General Hospital, after sixteen years of service.——Dr. Clement L. Bell, Norwalk, has been appointed county physician of Huron.

PENNSYLVANIA

The Mütter Lecture.—At the meeting of the College of Physicians of Philadelphia, held, November 2, the Mütter Lecture on surgical pathology was delivered by Prof. H. C. Jacobaeus, Stockholm, Sweden, on "The Surgical Treatment of Tuberculosis of the Lungs."

New Alumni Association.—An alumni association, including the graduates of the University of Pittsburgh School of Medicine, was organized, September 26. More than 100 members were present at the meeting. The following officers were elected for the ensuing year: president, Dr. Richard J. Behan; vice president, Dr. Calvin C. Marshall; secretary, Dr. Henry J. Benz, and treasurer, Dr. Hugh E. McGuire.

Hospital News.—Plans have been completed for the erection of an addition to the Wilkes-Barre Hospital, at a cost of $125,000.——A new hospital will be built at Phillipsburg.——The Knights of Malta will erect a home and hospital at Granville, at a cost of $1,000,000.——A new hospital for nervous diseases will be constructed in Philadelphia at a cost of approximately $2,000,000.

Philadelphia

Plan Hospital Addition.—F. L. Hoover & Sons have been awarded a contract by the Pennsylvania Hospital for an addition, at an estimated cost of $38,000.

Seek Fund for Hospital.—A campaign to raise $125,000 in one week for new buildings to double the capacity of the American Hospital for Diseases of the Stomach has been launched by friends of the hospital. The campaign is under the direction of an executive committee. Headquarters have been established at the Bellevue-Stratford.

Pennsylvania Leads in Hospital Service.—According to a report submitted to the convention of the Clinical Congress of the American College of Surgeons, Pennsylvania led the country in the improvement of its hospital service in 1921. The report, prepared by Dr. Franklin H. Martin, secretary-general, was said to have been based on a survey of every hospital of 100 or more beds in the United States and Canada.

TENNESSEE

New Hospital Superintendent.—Dr. Paul H. Dietrich has recently been appointed superintendent of the George W. Hubbard Hospital at Nashville. Dr. Dietrich was previously superintendent of the Red Bank Sanatorium, Thorofare, N. J., and has served as resident physician in other hospitals in New York City and in Michigan.

TEXAS

Hospital News.—It is announced that a Methodist hospital will be built at Oak Cliff at a cost of $1,000,000.

Public Health Meeting.—A public health institute will be conducted, January 6-16, at Dallas, under the auspices of the U. S. Public Health Service, Texas State Board of Health and the American Public Health Association, with the cooperation of seventy-five medical organizations. Eighteen thousand invitations have been issued, and more than 2,000 physicians are expected to attend the session, under the direction of Dr. Manton M. Carrick, Texas state health officer. Among the speakers will be: Drs. William Charles White, Pittsburgh; Lieut.-Col. Edward B. Vedder, M. C., U. S. Army; Frederick R. Green, secretary of the Council on Education, American Medical Association, Chicago; Gen. Allan J. McLaughlin, U. S. P. H. S., Washington, D. C.; Joseph Goldberger, Washington, D. C.; Clyde E. Ford, New York; John Dill Robertson, commissioner of health, Chicago; James J. Terrill, Dallas, and Dr. Valeria Parker, secretary of the Interdepartmental Hygiene Board, Washington, D. C.

VERMONT

State Medical Meeting.—The one hundred and eighth annual convention of the Vermont State Medical Society was held, October 13-14, at St. Albans, under the presidency of Dr. Schuyler W. Hammond, Rutland. The following officers were elected for the ensuing year: vice president, Dr. Lucretius H. Ross, Bennington; secretary, Dr. William G. Ricker, St. Johnsbury, and treasurer, Dr. David Marvin, Essex Junction.

VIRGINIA

Personal.—Dr. Horace G. Longaker, Newport News, has been appointed assistant health officer to succeed Dr. Marshall W. Sinclair, who resigned recently.——Dr. Junius F. Lynch, Norfolk, has been elected department commander of the American Legion.——Dr. George A. L. Kolmer has been appointed professor of educational hygiene, Roanoke College, Salem.

WEST VIRGINIA

Personal.—The governor has appointed Dr. Dennis McClung, Ruppert, as superintendent of the State Hospital for the Insane, Spencer, to succeed Dr. Samuel R. Holroyd.

WISCONSIN

Health Work Among the Indians.—At the meeting of the Wisconsin Anti-Tuberculosis Association, held, October 20-22, at Milwaukee, plans were made to aid the Indians of the state, owing to the prevalence of disease among the children and the numerous deaths from tuberculosis.

CANADA

Radium Lost.—Recently at the Hamilton City Hospital, Hamilton, Ont., $10,000 worth of radium was mislaid. It is believed that a careless patient threw the radium down a sewer. So far efforts on the part of experts have been unsuccessful in recovering the radium.

Cancer Campaign.—The Canadian committee of the American Association for the Control of Cancer participated in the latter's cancer campaign, by holding a meeting at the Academy of Medicine, Toronto, where addresses were given by Dr. Harvey R. Gaylord and Dr. Eli Shriver of Buffalo.

Hospital News.—The new St. Joseph's Hospital, Toronto, which was converted from the building occupied by the Sacred Heart Orphanage, opened its doors this week, when eight Toronto patients received treatment.——Plans for the new Reception Hospital, Toronto, have been completed, and tenders will be asked for shortly. The cost of the new building will be $400,000.

Personal.—Dr. Louis G. Pinault, Campbellton, N. B., was elected president of the New Brunswick Medical Society at its forty-first annual meeting, held recently.——Dr. Alexander Primrose, Toronto, was recently elected to the board of regents of the American College of Surgeons, at the annual meeting at Philadelphia.——At a banquet tendered to Dr. Abraham Groves, pioneer surgeon, who has practiced in the vicinity of Fergus, Ont., for fifty years, a number of prominent Canadian and American physicians were present. Dr. David Jamieson, Durham, Ont., former speaker of the Ontario legislature, was the toastmaster.

GENERAL

Belgians Study Hospitals.—Three Belgian architects are in the United States for the purpose of studying hospital construction and administration in connection with the building of the medical school, consisting of 400 beds, to be erected at the University of Brussels. Dr. Louis Christophe, University of Liége, is also in this country studying American hospital standards.

Graduate Medical Education in London and Paris.—Those seeking graduate medical courses in either London or Paris would do well to correspond with the American University Union in Europe at 50 Russell Square W. C. 1 London, or at 1 Rue de Fleurus, Paris, where definite information in regard to courses available in those cities can be obtained. Letters have been received from Americans in Europe commenting on the excellence of the service rendered.

American Academy of Ophthalmology and Oto-Laryngology.—At the annual convention, held, October 17-22, at Philadelphia, the following officers were elected for the ensuing year: president, Dr. Walter R. Parker, Detroit; treasurer, Dr. S. H. Large, Cleveland; secretary, Dr. Luther C. Peter, Philadelphia, and editor of transactions, Dr. Clarence Loeb, Chicago. Prof. I. Van der Hoeve, Leiden, Holland, gave an address, and papers were read by Drs. Edward B. Heckel and William B. Clark, Pittsburgh.

Joint Electrotherapeutic Meeting.—The American Electrotherapeutic Association and the New York Electrotherapeutic Society will hold a joint midwinter clinical session, December 28-30, at the U. S. Public Health Service Hospital No. 61, Fox Hills, Staten Island, N. Y. The purpose of this

session is the demonstration of apparatus of its actual application and of the results obtained by all physical modalities. Time will be given for questions after each demonstration, and all physicians are cordially invited to attend. The program committee will be pleased to receive suggestions and questions from members of both societies.

American Association of Railway Surgeons.—At the annual convention of the association, held, October 18-20, at Chicago, under the presidency of Dr. Clarence W. Hopkins, the following officers were elected for the ensuing year: president, Dr. Paul E. Gardner, New Hampton, Iowa; first vice president, Dr. Karl F. Snyder, Freeport, Ill.; second vice president, Dr. Arthur C. Stokes, Omaha; third vice president, Dr. James R. Garner, Atlanta, Ga.; treasurer, Dr. Henry B. Jennings, Council Bluffs, Iowa (reelected); secretary-editor, Dr. Louis J. Mitchell, Chicago (reelected); members of the executive board, Dr. William H. Bohart and Dr. Clarence W. Hopkins, both of Chicago (reelected).

Pharmaceutical Research Grant Fund.—At its 1921 meeting in New Orleans, the American Pharmaceutical Association awarded the 1921-1922 grant from its research fund to Dr. David I. Macht, Johns Hopkins University, for pharmacological work on the benzyl compounds found in certain galenicals. The first grant made in 1919 was awarded to Dr. George D. Beal, University of Illinois for work on alkaloidal assays, while the 1920 award was made jointly to Dr. Heber W. Youngken, Philadelphia College of Pharmacy and Sciences for work on aconite varieties, and Dr. E. Kremers and Miss Lila Winkelblech of the School of Pharmacy, University of Wisconsin for work on derivatives of guaiacol.

Bequests and Donations.—The following bequests and donations have been announced:

New York University, $25,000, for the establishment of a fund for laboratory and surgical research, by the will of Mary Ann Palmer Draper.

Kings Daughters' Hospital, Perry, Iowa, $10,000, by the will of John B. Gilbert, Coon Rapids, Iowa.

Murphy Memorial Hall, Chicago, $1,000, by Dr. Franklin H. Martin, Chicago.

Home for Incurables, Philadelphia, $1,000, by the will of Juliet K. Hood.

Pottsville Hospital, Pa., $1,000, by Mr. Arthur Sheafer, Pottsville; $500, by J. B. Jones, president of the hospital, and $500 by Dr. Hamilton C. Wallace, on the staff of the hospital.

Medical Department of the St. Joseph (Mo.) Public Library, the medical library of the late Dr. Pierre I. Leonard, amounting to 1,200 volumes.

Virginia Tuberculosis Association, $1,000, by Horace Carter, Richmond.

Regulations on Medicinal Beer.—Internal Revenue Commissioner Blair is proceeding with dispatch to issue permits to brewers for the manufacture of medicinal beer throughout the country in compliance with the regulations recently issued by the Secretary of the Treasury. Red tape will be eliminated, it was stated by Commissioner Blair, in the operation of the regulations, and applicants may apply to state prohibition directors in order to obtain the necessary permits. Brewers who have violated the prohibition law will be refused permits, but this number is limited and insignificant. Senator Wadsworth of New York has introduced an amendment to the revenue bill now before the senate levying a tax of 60 cents a gallon on beer, $1.20 a gallon on wine, and $6.40 a gallon on distilled spirit. The New York senator takes the stand that, since the sale of these beverages for medicinal purposes is to be permitted under the law, the government should be able to derive income in the way of taxes on them.

Committee to Push Sheppard-Towner Bill.—Advocates of the Sheppard-Towner maternity and infancy measure have organized a regular propaganda to secure the final passage of this proposed act before Congress. Headquarters are maintained and publicity is being circulated. The organization is known as the Sheppard-Towner Emergency Committee. The executive secretary of this committee is Arnold W. Rosenthal. In a recent statement distributed to the press by Rosenthal, it is declared that President Harding is in favor of early enactment of maternity and infancy legislation, and a letter from George B. Christian, Jr., is quoted as evidence that the White House stands behind this program. The other officers of the Sheppard-Towner Emergency Committee are C. H. Hathaway, chairman; committee members, Dr. Royal S. Copeland, health commissioner of New York; Dr. Richard Bolt, general director, American Child Hygiene Association; Prof. Irving Fisher, and Nathan Strauss, Jr.

Mortality Statistics. — The department of commerce announces that the Census Bureau's annual report on mortality statistics shows 1,142,578 deaths as having occurred in 1920 within the death registration area of continental United States, representing a death rate of 13.1 per thousand population as compared with 12.9 in 1919, which was the lowest rate recorded in any year since the registration area was established in 1900. The death registration area (exclusive of the territory of Hawaii) in 1920 comprised thirty-four states, the District of Columbia and sixteen registration cities in nonregistration states, with a total estimated population, July 1, of 87,486,713, or 82.2 per cent. of the estimated population of the United States. The death rate from pneumonia increased from 123.5 per hundred thousand in 1919 to 137.3 in 1920. For chronic diseases of the heart the rate increased from 131 to 141.9; for cancer, from 80.5 to 83. Some of the other diseases for which the rate increased are whooping cough, measles, cerebral hemorrhage, congenital debility and malformations, puerperal fever, scarlet fever and appendicitis. The fatalities caused by automobile accidents and injuries show an increase from 9.4 per hundred thousand in 1919 to 10.4 in 1920. A marked decrease is shown in the death rate from tuberculosis. The death rate from suicide declined from 11.4 in 1919 to 10.2 in 1920.

Report of Committee on Drug Addiction.—There are 1,000,000 addicts to the drug habit in the United States, according to the estimates prepared by a committee appointed by the Secretary of the Treasury to investigate the use of drugs in the country. The committee's report also gives figures on the amount of drugs supplied to the public under the law, with other information showing that a great deal is being imported through underground channels. The report in part says:

> Quantities of opium and cocoa leaves, in their crude state and in the form of manufactured products, were supplied to the public through a total of 233,491 individuals and institutions registered under the Harrison Narcotic Law. The minimum value of these drugs, computed on the basis of the retail price of the crude material, would be something over $20,000,000. The actual cost to the consumer, while it greatly exceeds this amount, cannot be estimated at the present time. When we take into consideration that the various investigators have stated that only from 10 to 25 per cent. of the quantities of drugs imported is actually needed to supply the demands of legitimate medical purposes, we can arrive at some idea of the quantities of these drugs consumed by addicts and the amount of money expended to satisfy the addiction. In recent years, especially since the enactment of the Harrison law, the traffic by "underground" channels has increased enormously, and at the present time it is believed to be equally as extensive as that carried on in a legitimate manner. This traffic is chiefly in the hands of the so-called "dope pedlers" who obtain their supplies by smuggling from Canada, Mexico and along the Atlantic and Pacific coasts. Information in the hands of the committee indicates that drug addiction is less prevalent in the rural communities than in cities or congested centers. It would, therefore, be unfair to estimate the number of addicts of the entire country on the basis of the figures obtained for New York City. Furthermore, it is the opinion of the committee that an estimate based on the number of addicts in a small city like Jacksonville, Fla., would not be representative for the entire country. Taking these facts into consideration, the committee is of the opinion that the total number of addicts in this country probably exceeds 1,000,000 at the present time.

Congress of the American College of Surgeons.—The congress of the American College of Surgeons was held in Philadelphia, October 24-28. Among those from abroad were: Drs. H. C. Jacobaeus, Stockholm, J. Schoemaker of The Hague and Dr. F. de Quervain, Berne. Hospital Day, October 24, the morning session was given over to a discussion of hospital standardization. Dr. John B. Deaver was inaugurated as president, and an address was made by the retiring president, Dr. George E. Armstrong. A $500,000 research academy as a monument to American surgery, a tribute to the late Dr. John B. Murphy, it was stated, will be built by the college, in conjunction with the citizens of Chicago, on a site adjoining the present home of the college. At a meeting, October 27, the college pledged to raise $150,000 within the next year, and $30,000 in individual pledges of $1,000 down to $250 was raised within a half hour. Dr. George W. Crile, Cleveland, presided at the meeting, which resolved itself into a spontaneous tribute to Dr. Murphy. Officers elected for the year 1922-1923 were Drs. Harvey Cushing, Boston, president; Henry Sherk, Pasadena, Calif., first vice president, and George P. Miller, Philadelphia, second vice president. One new member of the board of regents was chosen, and four reelected: Daniel F. Jones, Boston, new member; George W. Crile; Alexander Primrose, Toronto; Albert J. Ochsner, Chicago, and George E. de Schweinitz, Philadelphia. The next meeting will be held in Boston. The closing session, "The Convocation," was held, Friday evening, October 28. After the procession of regents and honorary guests and the invocation by Cardinal Dougherty, Archbishop of Philadelphia, Prof. Harvey Cushing, Harvard Medical School, introduced the delegation from the Royal College of Surgeons of Ireland, who attended the congress in order to confer honor-

ary degrees on Drs. George E. Brewer, New York; W. J. Mayo and C. H. Mayo, Rochester, Minn.; A. J. Ochsner, Chicago; W. W. Keen and Richard Harte, Philadelphia; George W. Crile, Cleveland, and John M. T. Finney, Baltimore. Seven hundred and nineteen surgeons from all parts of the country were inducted into the college by the president.

LATIN AMERICA

Memorial to Carvallo.—The death of Prof. C. T. Carvallo, called the leading surgeon and the founder of gynecology in Peru, was mentioned in THE JOURNAL, May 22, 1920. A memorial meeting was recently organized at Lima, and a portrait unveiled in the hall where he taught.

Tribute to Figueira.—Recently, when the number of children inscribed in the Children's Policlinic at Rio de Janeiro reached 100,000, the personnel of the clinic installed a bronze tablet in the reception hall of the establishment in honor of the chief, Prof. Fernandes Figueira. His publications on pediatric themes are well known, especially his study of the cephaloplegic syndrome, the transient paralysis of the neck in young children.

Training School for Nurses in Rio.—The *Brazil-Medico* states that the Rockefeller Foundation is to found at Rio de Janeiro, in accord with the National Public Health Service, a training school for nurses modeled on those of the United States. Two trained nurses have already arrived and been in conference with Dr. Carlos Chagas, chief of the public health service, to discuss ways and means for organization of the training school.

More Brazilian Notes.—On the occasion of the anniversary of Dr. Luiz Barboza's appointment as director of the municipal department of public assistance of Rio de Janeiro, the employees of the department presented him with a special copy of the department regulations, beautifully printed and bound, and an artistic card reading, "To Dr. Luiz Barboza, creator of the Municipal Department of Public Assistance." ——Dr. B. Valverde, a well known leprologist of Brazil, has been granted, by the National Academy of Medicine, the prize "Souza Araujo" for his paper on "Leprosy in Brazil."——At the Polyclinic of Botafogo a first aid course has been started for public assistance employees, under the direction of J. B. Canto.——New officers have been elected for the Brazilian Society of Neurology, Psychiatry and Legal Medicine, as follows: vice president, Dr. R. Caldas; secretary-general, Dr. U. Vianna; first secretary, Dr. H. Carrilho; second secretaries, Drs. A. Botelho and Odilon Gallotti; treasurer, Dr. W. de Almeida. Prof. J. Moreira is the perpetual president of the society.——A new medical society has been founded at Campos. The officers are: president, Dr. I. de Moura; vice president, Dr. B. G. Pereira Nunes; first secretary, Dr. O. Cardoso de Mello; second secretary, Dr. J. Garcia Junior; treasurer, Dr. A. Bastos Tavares; librarian, Dr. O. de Brito. The bulletin of the society is entitled *Boletim da Sociedade Fluminense de Medicina e Cirurgia.*

Personal.—Dr. J. A. López Antongiorgi has returned to his home at Porto Rico from New York, where he spent several weeks.——Dr. Aaron Renchetrit, a prominent physician of Caracas, Venezuela, has arrived at New York, on his way to Honolulu, H. I., where he is planning to conduct some scientific research.——Dr. Julio Senior, an ophthalmologist of San Domingo, has returned to his country after spending some time in the United States.——The congress of the American College of Surgeons at Philadelphia was attended by Dr. J. de Mendoça, Rio de Janeiro; Dr. A. de Lima, São Paulo, Brazil; Dr. M. H. Alcivar, Guayaquil, Ecuador, and Dr. G. Gastañeta, Lima, Peru. Surgeon-General Ireland of the U. S. Army gave a dinner in Washington, D. C., in honor of the two Brazilian surgeons.——Dr. L. Aybar and his wife have returned to their country after spending some time in New York.——Dr. R. Nogueira, Cuban delegate to the medical week congresses at Strasbourg, is now in New York on his way home.——Drs. F. and S. Loredo, the director and assistant director, respectively, of the municipal hospital Freyre Andrade of Havana, have left New York on their way to Cuba, via Key West.——Dr. E. R. Hildreth, former surgeon of the Presbyterian Hospital of San Juan, Porto Rico, has returned to New York after spending five years on the island.——Dr. J. del Toro Cuevas, prominent surgeon of Porto Rico and former president of the Medical Society of Porto Rico, is spending some time in New York.——Dr. F. Peña Trejo is acting as consul of El Salvador in New York City.——The professor of hygiene at S. Paulo, Dr. W. Smillie, is to take the sixth year students of S. Paulo medical school to Rio for study of the institutions there and of the Oswaldo Cruz Institute.——Dr. Carmo Lordy is filling the chair of microbiology at S. Paulo during the temporary absence of Prof. A. Pedroso.

FOREIGN

Health in England.—It has been announced by the chief officer of the ministry of health that in 1920 no epidemic of any kind occurred in England, and out of the population of 13,873,000 only 60 per cent. received treatment.

Tribute to Darier.—As Prof. J. Darier leaves the Saint-Louis Hospital soon, his students and other friends are to present him with a bust and medal. All subscribing 60 francs or over will be given a replica of the medal which is to be engraved by Dr. Paul Richer.

Fortress Transformed to a Sanatorium.—The *Policlinico* congratulates the Venetian organization for the aid of the war disabled on the new sanatorium into which the old fort at Malamocco has been transformed. The royal family has recently donated to the Red Cross the large castle and grounds near Palermo that were used for a temporary hospital, and they are to be arranged for a sanatorium.

The Oldest Medical Faculty in the World.—Great preparations are under way for the celebration of the seven hundredth centennial of the official foundation of the medical faculty of the University of Montpellier. The *Paris Médical* says that there was a medical school there as early as the tenth century, but it was not officially recognized until the thirteenth. A monument to Rabelais, one of its most brilliant alumni, will be unveiled on the occasion as already mentioned.

The Italian War Museum.—During the war, Prof. G. Salvi was placed in charge of the collecting of specimens for a war museum, and delegates from the Anatomy Institute of the University of Parma visited the front daily to collect specimens, and the more important ones were systematically preserved. There are now 1,000 specimens listed and they have been donated to the Scuola di Applicazione di Sanita Militare at Florence, where they are now being installed and catalogued. The collecting was done under the auspices of the Italian Red Cross.

Medical Education in China.—Mr. Edwin R. Embree, secretary of the Rockefeller Foundation, has been in the Orient for four months, perfecting the organization and program of the new Peking Union Medical College which has been erected and is being maintained by the Rockefeller Foundation at the capital of the Chinese republic. Regarding medical education and conditions generally in China, Mr. Embree reports that the new medical school in Peking, which has been established by the Rockefeller Foundation, is designed to be a demonstration in medical education and scientific approach to problems of health and disease for the entire Far East. Its results will be measured not so much by the number of medical practitioners it turns out as by the standards it sets and the quality of the leaders and teachers which it trains for service in other institutions throughout China. The faculty of the college and the staff of the hospital have been assembled from America, Canada, and England and from the increasing number of promising Chinese scientists. The buildings, begun in 1917 and completed this summer, are sixteen in number, including in the principal group laboratories, hospital wards, an outpatient department, classrooms, an auditorium, a nurses' home, a power plant and accessory structures. These buildings, erected on the palace grounds of an old Manchu prince, are in the classic Chinese architecture, brilliant with symbolic painting on woodwork and porches and protected by great green roofs with broad, overhanging eaves. The interiors, however, of both laboratories and wards represent the most modern development in Western building and equipment. Medical science in Japan, he says, has made remarkable progress during recent decades. Such institutions as Kitasato Institute, and the medical schools of the four imperial universities would be a credit to any country. But while medical science and education have made great progress in Japan, the hospitals still present a pitiable appearance. This is largely due to the total lack of well trained nurses, a lack which degrades hospital care in many nations of the West as well as the East. In addition to the maintenance of the college and hospital in Peking, Mr. Embree pointed out that the Rockefeller Foundation is assisting thirty-one hospitals and medical institutions throughout Eastern and Central China and is furnishing fellowships for advanced study in America and England to fifty Chinese and foreign physicians and nurses who are to return for institutional and teaching service in China.

Deaths in Other Countries

E. M. Wilson, Lieut.-Col., R. A. M. C., president of the West London Medico-Chirurgical Society.——Col. Sir **William R. Hooper,** honorary surgeon to King George V, September 29, aged 84.——Dr. **R. Virel,** Capt., R. A. M. C., of Citadel and Nazerieh hospitals, Cairo, Egypt.——Dr. **D. L. Robert,** obstetric physician, Manchester Royal Infirmary, England.——Dr. **E. Bamberger,** physician to the Rudolfs-Spital at Vienna.——Dr. **Ramón A. de Torres** of San Juan, Porto Rico, a graduate of the University of Brussels.——Dr. **G. Fiorentino,** physician to the Italian Hospital at Tunis.——Dr. **A. Oliven,** founder of a sanatorium for nervous patients at Lankwitz, and instrumental in the organization of the annual medical excursions to study watering places.——Dr. **Kubes,** chief of the Prague Pasteur Institute, a victim to typhus.——The *Dermatologische Wochenschrift* mentions the death of Dr. **O. W. von Petersen,** professor emeritus of dermatology at St. Petersburg.——Dr. **C. H. Vogler,** president for twenty years of the Schaffhausen Canton Medical Society, Switzerland, aged 87.——Dr. **J. Vieira Marcondes** of Rio de Janeiro.——Dr. **B. Fromm** of Schöneberg, aged 88. He was cited frequently during the illness of the German emperor, Frederick III, as testifying to the fact that life and speech are possible after unilateral laryngectomy.——The *Paris Médical* mentions the death of Dr. **P. H. Soulier,** professor emeritus of the Lyons medical faculty, aged 88.——Dr. **A. H. Soulié,** professor of anatomy of the University of Toulouse, author of important works on anatomy and embryology, aged 54.——Dr. **A. de Parrel,** surgeon to the Dieppe hospital.——Dr. **G. Gonçalves** of the medical school of Bello Horizonte, Brazil.

Government Services

Work of Veterans' Bureau

In a comprehensive statement, Charles R. Forbes, director of the U. S. Veterans' Bureau, announced that a new system of activities had been adopted with many beneficial features to the ex-service men. The main plan is the discontinuance of the use of contract hospitals altogether, and the maintenance of all hospitals for the care of disabled war veterans under the direct control of the government and government physicians. Another provision is the proposition of seeing that every man in need of hospitalization, because of injuries received or diseases contracted in line of duty during the World War, is placed in a hospital under government supervision as soon as it is physically possible. The maintenance of an effective follow-up system of convalescents and those discharged from the hospitals is another principal feature of the new plan.

Course for Medical Reserve Officers

Surgeon-General Ireland of the Army gave out information this week that only one course will be conducted for National Guard and Reserve Officers of the Medical Corps during the present fiscal year at the field service school at Carlisle, Pa. The original plans of the Medical Department were to have a series of courses but, owing to the limited appropriations made by Congress, it has been necessary to reduce the number to one. This course will be the regular short basic course of six weeks, to be conducted in March and April, 1922. About eight medical officers from the National Guard and eight from the Reserve Corps will be selected to attend.

Course at Army Medical School

Beginning Jan. 1, 1922, the class of officers of the Medical Corps of the Army attending the Field Service School at Carlisle, Pa., will be transferred to Washington to take the basic course in the Army Medical School. It is also announced that the course at the Army Medical School will continue until June 30, 1922. The present class at Carlisle that will be transferred consists of fifty medical officers and nineteen dental surgeons. The next course at Medical Field Service School will open in August.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 10, 1921.

Sunlight and Health

In a letter to the *Times,* Prof. Leonard Hill returns to the subject of sunlight and health, which has been discussed in a previous letter (THE JOURNAL, July 9, p. 135). The department of applied physiology of the Medical Research Council is finding that the metabolism of children exposed to the sun and air at the Treloar Hospital is nearly 40 per cent. above that of children resting in a chamber. At the seaside the department is finding that body heat production is increased five times by paddling along the shore, and from eight to ten times by swimming in the present beautiful October weather.

The Freudian Doctrine

On presenting the prizes to successful students at Charing Cross Hospital, Sir Frederick Mott said that if he had the opportunity of again teaching physiology he would, in the light of experience gained in the last eight years, give special attention to the influence of the mind on the body and the body on the mind. Physicians seemed to have neglected this branch of medicine too much, and the consequence had been Christian science, faith-healing, neuro-induction and other forms of inspiring faith. Before the war it was thought that the neuropathic tendency occurred seldom in men as compared with women, but the formation of a conscript army, in which only physical disabilities were recognized as causes of unfitness, had showed that a large percentage of men were neuropathic and liable to neurosis, hysteria and neurasthenia, provided stress was sufficient. With a few notable exceptions, physiologists had ignored psychology, and psychologists had ignored physiology because academic psychology was mainly introspective and metaphysical. The Freudian school asserted that all psychic energy had its roots in the sexual instinct, and maintained that the sexual life began development at or even before birth. The energy of the sex instinct might undergo sublimation or diversion into other channels. He agreed entirely with McDougall in the acceptance of the general truth of the Freudian doctrine, without, however, committal to the acceptance of all or even, indeed, any of the other doctrines of sex instinct of Freud. He was of the opinion that the sex instinct, serving as the great source of psychic energy, was a fundamental principle of psychology. The researches he had been carrying on for many years on the reproductive organs in normal and insane persons supported this conclusion and explained why the biogenic psychoses came on in adolescence and at the climacteric.

British Health Officer on Prohibition in America

Sir Arthur Newsholme, late principal medical officer to the Local Government Board, has been in America for the last two years. At the Royal Society of Medicine he has given the results of his study of the prohibition law. The results of the first year of prohibition, he said, were only partial; but although it was still easy for the millionaire visitor to the United States to get intoxicating drink, it was still the fact that for the vast majority of the population alcoholic drinks had become unobtainable or were too expensive for frequent indulgence. There were 150,000 physicians in the United States, and every one of them had to take out a permit to enable him to prescribe alcohol. Four out of every five had not taken out a permit, and in twenty-four out of the forty-eight states not a single physician had taken out

one. As the results of prohibition, there was evidence of increased prosperity and of the diversion of large sums to the purchase of better clothing, etc. Rescue work in the large cities had largely been replaced by preventive work. Drunkenness and admissions to hospitals for acute alcoholism showed remarkable declines, and although alcoholism was often but one part of a mesh of evil circumstances, the short cut toward the removal of the evil which prohibition provided promised to be successful in diminishing not only disease, but also poverty and crime. He regarded as fantastic the fears that prohibition would lead to a similar ban on smoking. A country would never give a majority vote for the abolition of a personal habit unless that was associated with serious national evils. The case for compulsion was that moral suasion acted slowly, and meanwhile the multitudes of innocent people continued to suffer, and the community suffered in pocket and efficiency. Whether prohibition would endure the test of enforcement in America remained to be seen, but his view was that the American public will endorse the action taken and will insist on its continuance and extension. Sir Alfred Pearce Gould, who presided, speaking as surgeon, said the one thing which lay at the root of the justification of prohibition was the great physiologic fact of the influence of alcohol on the human body. He believed that anything which thwarted or lessened the power and development of the body could be rightfully prohibited.

Sir Peter Johnston Freyer

Sir Peter Johnston Freyer has died in his seventieth year. Born in Galway, he was educated in that city and at Dublin and Paris. He entered the Indian Medical Service and in it established a great reputation as an operator. He was specially interested in two widely different branches of operative surgery—cataract, and stone in the bladder, both very common in India. He performed an enormous number of operations. He and another Irishman in the service, also a great genito-urinary surgeon, Keegan, were among the first to adopt Bigelow's operation of lithotritry. Their success in a large series of cases established the operation at a time when it was not well received in America. On retiring from the Indian Medical Service, Freyer was appointed surgeon to St. Peter's Hospital for Stone in London. Here he introduced his suprapubic operation for enucleation of the enlarged prostate, one of the greatest advances in operative surgery. At first it was not well received by the surgeons of this country, and a stormy controversy, not without acrimony, was aroused. His claims were disputed on two grounds. Elaborate and abstruse anatomic arguments were brought forward to show that he did not remove the entire prostate. It was also alleged that the operation was not new and had been performed before by McGill of Leeds and others. Priority for the operation has also been claimed for Belfield of Chicago, who performed suprapubic prostatectomy in 1886. But Freyer always asserted that none of his predecessors performed the complete operation which he did. McGill's operation, he said, was attended by high mortality and a failure of the bladder to recover power of expelling urine, because only the prominent portions of the prostate were removed. The controversy has been again revived in the *British Medical Journal* by Sir Clifford Allbutt and Mr. Littlewood, who were colleagues of McGill at Leeds. They claim that McGill did anticipate Freyer. Be that as it may, it is certain that it was Freyer's work and his fight against much opposition which caused the surgical world to adopt the operation. As a writer, Freyer was clear and incisive. He was a keen controversialist, at times virulent and sarcastic. The following story illustrates the latter quality: In his early days in London, an editor of one of the great medical weeklies, noticing that he could write, invited him to contribute to the editorial columns, proffering the remuneration current in those days, $3.75 a column. Freyer replied that he found that in the same time as it would take to write a column he could perform an operation for which he would receive $200. He therefore must decline the offer, munificent as it might appear.

The Remuneration of Insurance Physicians

The proposal of the government to reduce the capitation fee of insurance (panel) physicians from $2.75 to $2.25 (described in my last letter to THE JOURNAL, September 26, p. 1349) has naturally aroused great opposition in the profession. A deputation of the Insurance Acts Committee of the British Medical Association has been received on the subject by Sir Alfred Mond, minister of health. The minister pointed out that the government had to undertake a severe revision of expenditure throughout all its services. He considered that the national health insurance act had been on the whole a great success. The medical service had been bitterly attacked in the press; but, having gone into the matter to a considerable extent, he believed that the panel system, though, like all human institutions, imperfect, and having indeed obvious imperfections, had worked successfully in comparison with what existed before it came into operation. Physicians were performing their difficult and arduous task with zeal and conscientiousness, and although here and there criticisms were made of the way in which one man or another dealt with his patients, it could not be said that on the whole the medical profession had not done its best with the panel system. But in a great financial crisis he had to appeal to physicians to make some sacrifice for the common good, as all were compelled to make. When the panel system was adopted, the capitation fee was $1.75; by the last negotiations it was fixed at $2.75. The ministry thought it too high and the medical profession thought it too low. He had no doubt that both sides could make out a fine argumentative case. At any rate, the fact remained that an independent body arrived at $2.75 when asked to arbitrate on the question, last March. Since that time the cost of living had fallen and he had no doubt that it would continue to fall at a fairly steep rate. Having regard to the economy which was being carried right through the remuneration of government servants, he considered that the fee should be reduced to $2.25. If the proposal was not accepted, he had to consider the alternatives. One was reverting to the control of the physicians by the friendly societies. The profession did not desire this, and for good reasons. But considerable pressure was brought to bear by the societies for that end, and it still existed. The other alternative was to abolish medical benefit, giving insured persons the amount of money they were entitled to and letting them go to the physician or pharmacist for a bottle of medicine as they felt inclined or trusting to the powers of Nature. That would be unsatisfactory, but it would relieve the state of responsibility. Replying for the deputation, Dr. Brackenbury said that in response to the appeal on patriotic grounds they approached the matter with a desire to do whatever they could to meet the position. They did not want to cavil or haggle at all. The committee, which was only the executive committee of a representative conference, would like to go to it and to the profession and say: "We are asked to give up a certain sum on the grounds of pure patriotism, although the justice of the case does not necessarily demand that we give it up." But they were faced with another alternative than those mentioned by the minister: None of them felt called on by patriotism to take part in a service which was not good and effective. A considerable number of physicians were in the

service for the sake of making it a good service, and would feel that it was no longer worth while for them to remain, and their absence would lower the service. Then another layer of men would leave, and stability would be arrived at only when men by sheer economic pressure were compelled to cling to the service. Honestly they felt that the fee of $2.75 was on the verge of that situation.

Replying to Dr. Brackenbury, the minister said that as to a certain top layer in the service coming to the conclusion that the sum named was not satisfactory, and therefore leaving the panel system, it was obvious that the process must and could take place at all times regarding any figure except one which was impossible. Just as there were now a certain number of physicians who were not in the panel service, so there would always be a certain number coming out and a certain number going in—good young men, he imagined. He could not imagine this question being so greatly affected by a little more or a little less. He was not going to haggle over his offer, which he regarded as reasonable, and under the circumstances as generous. If the figure was not accepted, the ministry would reserve full liberty to consider any other proposal that might be made, but he wanted to avoid that. If the whole thing was thrown back into the melting pot, the final result might be not better than the first, but worse.

PARIS

(From Our Regular Correspondent)

Oct. 7, 1921.

The Four Medical Congresses Held in Strasbourg

Bordeaux was to have been the meeting place this year for the Congress of Medicine, but Bordeaux took on itself to suggest Strasbourg as the place of the first gathering on French soil since the liberation of Alsace-Lorraine. The Congress of Surgery had already chosen the famous Alsatian city for its 1921 session. The associations of urology and orthopedia also decided to follow this example, and thus Strasbourg, this year, became the place of meeting of four medical congresses, besides a reunion of the physicians and surgeons of the hospitals of France. The opening session common to the four congresses took place, October 3, in the auditorium of the University of Strasbourg. Monsieur Alapetite, general commissioner of the French Republic, delivered the opening address, in which he recalled that Alsace constitutes a center of intellectual activity of the highest order, where science, associated with such names as Wurtz and Pasteur, still retains its honorable rôle. Professor Boeckel, president of the Congress of Surgery, outlined the history of surgery in Alsace, emphasizing the rôle played by the medical profession of that province in the advancement of science during the last four or five centuries. Dr. Bard, professor of clinical medicine in the medical department of the University of Strasbourg and president of the Congress of Medicine, observed in his presidential address that the University of Strasbourg must be not only the outpost of French thought, but also the "listening post," with the duty of closely observing the affairs and the people of central Europe. He remarked further that for a few obdurate idealists the University of Strasbourg is called on to serve as a connecting link between German and Latin culture. Immediately after the opening session of the four congresses, the exposition organized by the army medical corps threw open its doors. It comprised a historical section, which called up memories of the old military medical school of Strasbourg, and a contemporaneous section, which illustrated in a graphic manner all the present organizations pertaining to the army medical service. To signalize the event of the holding of these four congresses, the *Presse médicale* dedicated a number published two days before the opening to "the medical week in Strasbourg." This number, in which is found, among other subjects, an interesting historical sketch of the school of medicine of Strasbourg, from its origin until 1870, is embellished with illustrations showing several views of Strasbourg hospitals. In the United States, THE JOURNAL publishes every year an illustrated number dedicated to the city in which is held the annual convention of the American Medical Association, but in France this was an innovation, and the initiative taken by the *Presse médicale* deserves special mention.

Medical Lectures in French to Be Given in Holland

Acting on the suggestion of Dr. Scheltema, professor of clinical pediatrics in the University of Groningen, the Holland association for child welfare has organized a series of lectures to be delivered by Dr. Nobécourt, professor of pediatrics in the medical department of the University of Paris, at Groningen, Utrecht, Amsterdam, Leyden, Rotterdam and The Hague, from October 23 to 30. They are intended, on the one hand, for members of the association and its invited guests, and, on the other hand, for university authorities and for the medical students of the four universities of Holland. The aim of the association is to direct the attention of students and physicians to the importance of social hygiene as applied to children and to promote, among the general public, a sentiment in its favor.

Courses for Foreign Students

It is interesting to note, at the opening of the academic year, the various bureaus that have been organized to aid foreign students in selecting courses of study. There is in Paris: (1) a Bureau de renseignements (bureau of information) at the Sorbonne, which answers either verbally or in writing all questions asked by students concerning studies and living quarters in Paris; (2) the Office national des universités et écoles françaises, 96 boulevard Raspail, founded for the purpose of aiding in the development of university and intellectual relations between France and other countries, and which is at the disposal of all professors and students whose special studies or the desire of being in direct contact with French teachers have brought them to France; (3) the Comité de patronage des étudiants étrangers, at the Sorbonne, having for its purpose the rendering to foreign students the material and moral assistance that they may need. Comités de patronage des étudiants étrangers exist also in Bordeaux, Lille, Lyons, Montpellier, Nancy and Toulouse.

BELGIUM

(From Our Regular Correspondent)

LIÉGE, Oct. 4, 1921.

Meeting of Brussels Physicians

The editorial department of the *Bruxelles médical* has organized a meeting of Brussels physicians, to be held from November 13-15 and presided over by the most competent medical authorities in the city. Nine essayists who are particularly well qualified to expound the principal innovations within the domain of their respective specialties have been chosen: Professors J. L. Faure (Paris), Henrijean (Liége) and Bordet, Broden, J. Demoor, Philippson, Sand and L. Stiénon (Brussels). Independent of these addresses, visits will be organized to the Institut Vaccinogène de l'état, the Laboratoire central des denrées alimentaires, the Ecole de médecine tropicale, to the Instituts universitares, etc. Aside from this, scientific and clinical demonstrations, operative séances and exhibitions of cinematographic films will be given in the principal services of the Hôpital St. Pierre, the Hôpital St. Jean, the Hôpital Ixelles, the Polyclinique universitaire, and the Polyclinique de Bruxelles; also in the

various private clinics and the various laboratories for biologic research.

Belgian Sanitary Mission in Poland

Nearly a year ago, I mentioned the departure of a Belgian sanitary mission for Poland, sent out by a committee that, under the chairmanship of Minister Carton de Wiart, was authorized to collect funds to be used in aid of that sorely stricken country. The medical mission was composed of five physicians, one pharmacist-bacteriologist, twenty-four nurses, one roentgenologist, and the necessary assistant personnel such as stretcher bearers, cooks, chauffeurs, etc. The mission left Brussels the end of September, 1920, and returned the end of April, 1921, after a sojourn of seven months in Poland. At Brest-on-the-Bug, the mission established an epidemic hospital, for it seemed as if in this region all the epidemics known today had established a trysting-place: cholera, diphtheria, dysentery, typhus fever, typhoid fever and malaria. Three of the nurses, while nursing patients, contracted typhus fever, and a chauffeur typhoid fever. The Red Cross of Belgium, as evidence of its sympathy for Poland, presented to the Polish Red Cross the hospital complete, including all installations: furnishings, linen, operating rooms, dressing rooms, as well as a large quantity of provisions.

BERLIN

(From Our Regular Correspondent)

Oct. 7, 1921.

The Psychologic Selective Test as Applied to Schoolchildren

In Berlin and certain other cities of Germany special schools for unusually endowed pupils have recently been established. In these schools the pupils receive better instruction than is given in the average public school. In order to select these more highly gifted children, a special "psychologic selective procedure" has been inaugurated. For the purpose of testing the intelligence on an experimental psychologic basis, a carefully planned system of examination of the analytic and synthetic, and of the simple and compound chief functions of consciousness has been drawn up, which I wish to discuss briefly. Attention and power of concentration are tested from the standpoint of continued tension, diversion of attention and ability to attend to several things at once. The memory is tested by giving new material to memorize and with reference to the present memory store at the disposal of the candidate, including the degree of readiness and the orderly manner in which it is presented or developed. A further task of the investigating committee is the examination of the power of association. The so-called linked (*gebundene*) and free association are tested. The power of linked association is determined by the Ebbinghaus method by filling out gaps in a given text. In the testing of the powers of free association the person being examined must, within a given time, state all the possible reasonable connections between three given ideas or notions, to mention the well known example: *murderer—mirror—rescue*. The range of comprehension of new ideas is also established experimentally; likewise the range of the subject's stock of ideas and the degree of readiness in calling them to mind; also the formation of new relations between ideas, the selection of the essential among given elements, the finding of what is common in given members of a series, and, finally, the grasp of the functional relations between several series of observations. Furthermore, the subjects are tested with regard to their power of judgment. This special gift of judgment is divided into various groups: (1) general power of judgment, and (2) the judging of special cases. Under (1) belong: essential evaluation of the conditions, psychologic insight into the realities of a situation as presented by pictures and oral description, and psychologic evaluation of the essential facts thereof. Under (2) is tested the grasp of probabilities under given conditions, the finding of the most practicable solution in a given situation and the capacity for critical differentiation. The last main heading in this system of examination concerns the determination of the power of perception and the capacity for observation. Subdivisions under this head deal with the power of perception in actual experiments, combined with oral demonstration; the keenness of observation and the yield in observations in connection with classification according to categories; verbal statements in regard to objects and their characteristics in oral demonstrations, and the grasp of relationships in the perception of the basis of analyses and syntheses in actual experiments.

The results of the several tests are entered on a suitable individual record sheet, and the general average grade is calculated.

Effectual Serum Prophylaxis of Measles

Dr. Degkwitz, assistant attending physician at the Munich University Children's Hospital, recently published his observations on 172 children who were given injections of the serum of measles convalescents. All the children who received the prophylactic injections of serum between the second and sixth day after the infection proved immune to the disease. The serum was obtained by vein puncture, from seven to fourteen days after convalescence, from children who had gone through with uncomplicated measles and were free from tuberculosis and syphilis. Mixed serums were prepared and such quantities of serum (usually from 3.5 to 4 cu. mm.) as will protect a child of 3½ years against the disease, up to the fourth day of incubation, are designated a protective unit (*Schutzeinheit*). If insufficient quantities of serum are given at the right time during incubation, the appearance of the disease is delayed and the symptoms are attenuated. The serum of adults, in large doses, does not delay the onset of the disease but does attenuate it. Utilizing the results of Degkwitz' experiments, it is said to be possible, by this method, to prevent the spread of measles in foundling asylums, day nurseries, hospitals, etc. According to an article published by Professor Kleinschmidt, these observations have been confirmed by experiments conducted in Hamburg. Out of a total of sixty children given injections of serum on ten different occasions, according to Degkwitz' method, one child came down, on the twentieth day of incubation, with abortive measles, and one with measles of an incomplete, questionable type. In the case of the first child the quantity of serum employed was too small. The eruption may occasionally occur on the fifth day of incubation; for reliable observations on the infection were made five days before the appearance of the exanthema. A heavier dose must therefore be given on this day in order to be safe. In six children there was a fever of one day's duration and pains at the site of the injections; in eight infants given injections of the same fluid mixed serum there occurred likewise immediate fever, paleness, cyanosis (in some), restlessness, anorexia, and (in two patients) vomiting and diarrhea. Probably we have here a primary toxic effect of a homogenous serum, as was occasionally observed by Bode in dealing with the serum of scarlet fever convalescents. Von Pfaundler states that in Munich more than 1,000 children were given injections without the occurrence of any such secondary manifestations. In the department of pediatrics of the Berlin Verein für innere Medizin, Dr. Kulter reported, from the Emperor and Empress Frederick Children's Hospital, that in 107 subjects, who were given the injections at the proper time during the incubation period—between the second and sixth day—perfect success was attained. In seven cases there was an apparent

failure, because the serum was used too late. In four other cases failures were recorded. The serum of adults yielded two failures in nine cases. He reports, after one observation, on the duration of the protection (immunity). It was the case of a severely tuberculous child, in whom the protection did not extend beyond three and a one-half months. L. F. Meyer, the director of the municipal orphan asylum in Berlin, also confirms the great practical importance of the Degkwitz' procedure. With respect to certain failures, it seemed to be a question of children with subnormal capacity for formation of antibodies in febrile and wasting diseases. Very favorable results were secured also with the injection of the serum of adults. However, the prophylactic injection of the serum of the new-born afforded no protection. In the Rummelsburg orphan asylum in Berlin, on one occasion, six and, on another occasion, four children were given injections of serum; of the first group three were protected, one ran a mild course of the disease and one failed to receive protection. Of the four children of the second group two ran a mild course, while two presented typical cases of the disease. Possibly, as regards the last mentioned cases, the explanation lies in the fact that the serum employed was five and one-half months old. According to the opinion of the pediatrician, Professor Finkelstein, the problem of prophylaxis against measles has been solved in principle by Degkwitz. Failures appear to occur only because of delayed injections, inadequate doses or too old and therefore ineffective serum. It remains to be established how long the protection afforded by the inoculation continues. Of especial interest, although requiring confirmation, is Degkwitz' statement that the serum taken from children protected by injections, provided they presented no clinical symptoms of the disease, will protect other children. New-born and young infants are only immune to measles in case they are the offspring of mothers who present the disease.

BUDAPEST

(From Our Regular Correspondent)

Oct. 7, 1921.

Poisonous Milk from Cows Fed on Beets

At a meeting of the Interhospital Association, held, September 23, Dr. Szana mentioned that an epidemic of acute enteritis had broken out among the children of a village near Szolnok. No obvious cause appeared for this, as all the milk had been sterilized in the usual way. Inquiry eventually showed that, owing to the lack of ordinary forage, the cows had been fed on beet leaves and red cabbage, vegetables which are well known to give both milk and butter a particular flavor. Dr. Szana added that he had noticed a similar epidemic about five years ago. In this case it was due to the cows' having been fed on beets which had been kept in silos during the summer and which had fermented. The enteritis due to this cause presents the same features as that caused by microbe-infected milk, but feeding by skim milk, which has a favorable effect on microbial enteritis, has no effect on toxic enteritis.

Trypanosomiasis in Roumania

At the meeting of the Bucharest Hospitals Medical Society, held, September 10, Dr. Constantinesin showed a man who had been attacked with trypanosomiasis, the diagnosis of which had been confirmed by the finding of trypanosomes. After coming from Siberia the man went to Odessa; therefrom he came aboard a ship to Roumania. The ship was crowded with passengers who came from Turkey, Egypt and other southern countries. The patient had probably been infected aboard ship. After he arrived in Roumania, paralysis with atrophy of the arm supervened, the characteristics being similar to those observed in syphilitic paraplegia. The groups of muscles especially affected were those of the thenar and hypothenar eminences. There were also present affections of sensation, an exaggerated patellar reflex, Babinski's sign on the left side, and some modifications of the electrical reactions. All of the symptoms disappeared after treatment with atoxyl and neo-arsphenamin. The presence of the trypanosomes in this case made it easy to eliminate all the other causes to which the symptoms might have been due. The atoxyl was administered in 0.5 and 1 gm. doses, the neo-arsphenamin in doses of 0.30, 0.45, 0.60 and 0.75 gm.

Mortality from Syphilis in Budapest in 1919

At a meeting of the Hungarian Dermatological Society, Dr. Pór stated that he had attempted to calculate the mortality occasioned by syphilis in Budapest by taking into account various factors, of which the chief was the frequency of the Wassermann reaction in various affections. Besides the sixty-one cases assigned to syphilis in the official statistics, the ninety-four cases of general paralysis and the thirty-six of locomotor ataxia, there may be attributed to a syphilitic origin one third of the deaths from cerebral hemorrhage, apoplexy and softening, from paralysis of undetermined causation, affections of the spinal cord, and various diseases of the nervous system; one tenth of the deaths due to encephalitis, nontuberculous meningitis and epilepsy; one third of those from organic heart disease; three fourths of those due to angina pectoris; one half of those from aneurysm, atheroma and affections of the arteries, and one fifth of those from hepatic cirrhosis and chronic nephritis (as compiled by Leredde in Paris). A total figure of 1,817 deaths due to syphilis in 1919 is thus arrived at, excluding such diseases as pulmonary affections, icterus gravis, gastric ulcer, and especially congenital debility, and icterus and sclerema of the newly born, which kill 1,268 children each year. A large number of the deaths in early infancy are certainly due to syphilis. On the other hand, it must be remembered that municipal statistics show that 2,006 stillbirths were notified in 1919.

The Increase of Suicide

Statistics of the cases of suicide which occurred in the course of 1920 in Budapest show that 789 persons killed themselves here, as compared with 607 during the previous year. It is worthy of note that the increase was mainly among women, 305 of whom took their own lives as compared with 251 during the previous year, while the corresponding increase among men was only 14. This makes it seem that women are less able to resist bodily and mental troubles and the strain of daily life, but a sad feature of these statistics is the constant increase of suicides of children. The ages at which persons committed suicide varied within wide limits, the oldest of the victims being 56 years of age and the youngest only 10 years. The unstable condition of the mind which brings about such sad results must be caused by some fault of modern education and general mode of living, although it is to be admitted that the wretched material and spiritual conditions add greatly to the discontentedness of people. Breadwinning is exceedingly hard. The war has caused immense sorrow, and thus it is not surprising that those of lighter specific gravity—women—fall victims to the lure of ending life by suicide. It is a curious fact that the bright summer months are apparently more conducive to suicide than the gloomy winter days. Thus June, July and August head the list, while the lowest number of suicides occurred in December and January. The modes of death most frequently selected were hanging, shooting and poisoning with potassium hydroxid, sulphuric acid and oxalic acid. The most frequently assigned motives were inability to earn bread, ill health, disappointment in love, and want of food.

Marriages

STEPHEN HARRISON SMITH, Major, M. C., U. S. Army, March Field, Calif., to Mrs. Pamela King of Riverside, Calif., October 3.

DWIGHT H. MURRAY, Lieut., M. C., U. S. Navy, Mare Island, Calif., to Miss Genevieve Collins of Vallejo, Calif., October 5.

WILLIAM HERBERT BAHLKE, Baltimore, to Miss Agnes Louise Bitter of Roland Park, Md., at Baltimore, October 18.

JAMES EDGE FARIS, Fort Monroe, Va., to Miss Elizabeth Margaret Sheldon of Lowville, N. Y., October 22.

IRVING MEDBURY ADDLEMAN, Wausau, Wis., to Miss Katharyn Simons of Yorkville, Ill., September 13.

DOUGLAS MCENERY, Major, M. C., U. S. Army, to Miss Katherine Winn, at Fort Riley, Kan., October 12.

HESSELL STUART YNTEMA, Chicago, to Miss Jean Bazan of Holland, Mich., at Chicago, September 17.

LAURENCE G. ALEXANDER, Hopkinsville, Ky., to Miss Grace E. Padgett of Carterville, Ill., August 16.

JAMES LYMAN LOVEJOY, Weston, Vt., to Miss Barbara Newton Fox of Norwich, Conn., October 18.

WILLIAM F. ELY, Lansford, Pa., to Miss Bella May Kleckner of Tamaqua, Pa., October 12.

ALFRED ANTHONY HOFFMANN to Miss Marie Bartlett, both of Waterloo, Iowa, August 9.

WILLIAM H. VON DER WEYER to Miss Mildred M. Esswein, both of St. Paul, in October.

HERBERT HENRY THOMPSON to Miss Alice J. Lawrence, both of Minneapolis, October 1.

ROBERT W. GREGG, Tipton, Iowa, to Miss Mae G. Nelson of Iowa City, recently.

CLARENCE OLSON, Dows, Iowa, to Miss Faith Weldon of Iowa Falls, August 3.

Deaths

Dwight H. Murray ● Syracuse, N. Y.; Syracuse University College of Medicine, 1884; died suddenly from valvular heart disease on October 21, aged 60. Dr. Murray was born Aug. 31, 1861, at Altmar, N. Y. Subsequent to taking his degree in medicine at Syracuse, he was a student at the New York City Postgraduate Hospital and also at the clinics at Berlin and Vienna. He spent his entire professional life in Syracuse and at the time of his death was professor of clinical proctology at his alma mater and clinical proctologist at the Syracuse Memorial Hospital for Women and Children and at the Hospital of the Good Shepherd; he was also on the staff of the Syracuse Free Dispensary and a member of the board of managers of the Onondaga Sanatorium. He was a member and past president of the American Proctological Society, a member of the New York Academy of Medicine, and of the Syracuse Academy of Medicine, a member and former president of the Onondaga County Medical Society, a member of the Medical Society of the State of New York, and at the time of his death the vice speaker of its house of delegates. He represented the Medical Society of the State of New York in the House of Delegates of the American Medical Association continuously from 1910 to 1920, when he was elected Speaker of the House of Delegates, in which latter position he served at the time of his death. He was first chairman of the Section on Gastro-Enterology and Proctology, which was organized in 1917. He will be remembered by those who attended the numerous meetings at which he presided as a man of genial personality.

Alfred Alexander Woodhull, Brig.-Gen. U. S. Army (retired) ● Princeton, N. J.; University of Pennsylvania, Philadelphia, 1869; member of the Colorado State Medical Society; died, October 18, aged 84. Dr. Woodhull represented the medical department of the U. S. Army at the Eighth International Congress of Hygiene and Demography, London, 1891; was instructor in military hygiene at the Infantry and Cavalry School, Fort Leavenworth, 1886-1890; commanding officer of the Army and Navy Hospital, Hot Springs, Ark., 1892-1895; chief surgeon, Department of the Pacific (Philippines), 1899; retired, April 13, 1901; lecturer on hygiene and sanitation, Princeton University, 1902-1907; gold medalist, Military Service Institute, 1885. Dr. Woodhull was a Civil War veteran and the last surviving officer present at the surrender of General Lee. He was a member of the Association of Military Surgeons of the United States, and the American Public Health Association.

Charles North Smith, Toledo, Ohio; Bellevue Hospital Medical College, New York, 1882; member of the Ohio State Medical Association and formerly president of the American Association of Obstetricians and Gynecologists; secretary of the advisory board, St. Vincent's Hospital for twelve years; on the staff of the Flower Hospital; at one time president of the Toledo Academy of Medicine; Toledo representative on Council of National Defense; died, October 25, from cerebral endarteritis, aged 61.

Fred Cole Purcell, Jamestown, N. Y.; University of Buffalo Department of Medicine, 1903; member of the Medical Society of the State of New York; at one time president of the Jamestown Medical Society; was killed with his wife, October 12, in an automobile collision, near Blaisdell, N. Y., aged 44.

Hamilton Fisk Biggar, Jr., Cleveland; Cleveland College of Physicians and Surgeons, 1896; formerly on the staff of the Huron Road Hospital; during the late war served in the British marine service as transport surgeon; died, October 21, following an operation on the throat, in London, England, aged 48.

James Patterson [illegible]ham, Portland, Ore.; University of Oregon, Portland, 1909; veteran of the Spanish-American War; during the World War served as major, M. C., U. S. Army, in France; died, October 12, from injuries received in a motor accident in September, and terminal pneumonia, aged 43.

Victor Piolette Chaapel ● Williamsport, Pa.; College of Physicians and Surgeons, Baltimore, 1892; president of the Lycoming Medical Society, 1920; member of the house of delegates and second vice president of the Medical Society of the State of Pennsylvania; died, October 16, aged 56.

Rev. Jacob Franklin Spaulding, Salisbury, Mass. (years of practice); member of the Newburyport Medical Society; had practiced medicine and preached the gospel for over forty years; died, October 17, at the Anna Jacques Hospital, Newburyport, aged 79.

Charles Stephen St. John, Bowling Green, Ohio; Medical Department of the University of Wooster, Cleveland, 1886; member of the Ohio State Medical Association; died, October 12, from cerebral hemorrhage, aged 67.

David E. Ruff, Junction City, Ore.; University of Louisiana, New Orleans, 1867; veteran of the Civil War, member of the school board and city council; served eight years as city recorder; died, October 13, aged 81.

Henry J. Stalker, Kenosha, Wis.; Chicago Medical College, 1874; member of the State Medical Society of Wisconsin; died suddenly, October 13, from cerebral hemorrhage, while attending a patient in his office, aged 83.

Thomas B. Heimstreet, Cropseyville, N. Y.; Bellevue Hospital Medical College, New York, 1867; member of the Medical Society of the State of New York; naturalist and taxidermist; died, October 18, aged 79.

Plummer D. Russell, Pueblo, Colo.; Cleveland Homeopathic Medical College, Cleveland, 1904; inventor of several medical appliances; was found dead in his automobile, October 15, from cerebral hemorrhage, aged 50.

Alfred James Scott ● Los Angeles; University of Michigan, Ann Arbor, 1882; member of the state board of medical examiners since 1919; died suddenly in the street at Sacramento, Calif., October 16, aged 63.

Clarence Alanson Palmer, Brooklyn; Baltimore Medical College, Baltimore, 1895; served as surgeon in the U. S. Army Transport Service during the World War; died, October 17, from pericarditis, aged 50.

Isaac Berton Wilson, La Pine, Ore.; College of Physicians and Surgeons of San Francisco, 1910; lieutenant, M. C., U. S. Army, during the World War; died, October 11, in a hospital at Bend, Ore., aged 38.

Mark Ferdinand Toner, Berkeley, Calif.; Jefferson Medical College, Philadelphia, 1893; member of the Medical Society of the State of California; was found dead in bed, October 17, from heart disease, aged 53.

● Indicates "Fellow" of the American Medical Association.

Eugene Edward Williams, Enterprise, Ala.; Medical College of Alabama, Mobile, 1904; member of the Medical Association of the State of Alabama; died, August 26, from cerebral hemorrhage, aged 42.

Alexander M. Herron, Charlotte, N. C.; Medical College of South Carolina, Charleston, 1882; member of the South Carolina Medical Association; died suddenly, October 15, from heart disease, aged 61.

Isaac Edward Darr, Morley, Mich.; Medical College of Fort Wayne, Ind., 1882; member of the Michigan State Medical Society; died suddenly, October 17, when returning from a professional call, aged 67.

William A. Lincoln Cossey, Prague, Okla.; Memphis Hospital Medical College, Memphis, Tenn., 1900; lieutenant, M. C., U. S. Army, during the late war; died, October 7, from pneumonia, aged 54.

George Edward Washburn ✱ Augusta, Me.; Bowdoin Medical School (Medical Department of Bowdoin College), Brunswick and Portland, 1898; died, October 14, from pneumonia, aged 46.

Robert H. Van Cleave ✱ Farmersburg, Ind.; Medical College of Evansville, 1879; was instantly killed, October 15, when the automobile in which he was riding was struck by a train, aged 68.

Manchie E. Howard, Perryville, Ark.; Eclectic Medical College, Cincinnati, 1880; member of the Arkansas Medical Society; died from poison, self-administered, October 1, aged 60.

Chester Arthur Eversole, Hazard, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1906; died, October 9, from pneumonia, aged 40.

John T. Sparkman ✱ Alvord, Texas; University of Louisiana (Tulane University), New Orleans, 1881; organized the North Texas Medical Association; died, September 4, aged 58.

John Francis Crowley ✱ La Salle, Ill.; College of Physicians and Surgeons (University of Illinois), Chicago, 1900; died, October 22, from acute endocarditis, in Chicago, aged 55.

Raymond Laurence Wall, Yorkville, Ill.; University of Illinois, Chicago, 1913; member of the Illinois State Medical Society; died, October 12, from acute endocarditis, aged 33.

John Milholland, Inglewood, Calif.; Cincinnati College of Medicine and Surgery, 1874; veteran of the Civil War; formerly a practitioner in Iowa; died, September 28, aged 77.

Charles L. McCann, Brooklyn; University of the City of New York (University Medical College), 1871; practitioner in Brooklyn for half a century; died, October 19, aged 74.

Row O. Woodruff ✱ Waterford, Pa.; University of Vermont, College of Medicine, Burlington, 1899; specialized in laryngology and rhinology; died, August 28, aged 49.

John Dixon Kellis, Shuqualak, Miss.; Hospital College of Medicine, Central University of Kentucky, Louisville, Ky., 1882; died, October 6, from arteriosclerosis, aged 64.

Ramon A. de Torres, San Juan, P. R.; University of Brussels, Belgium, 1884; University of Havana, Cuba, 1897; died, October 16, from diabetes mellitus, aged 70.

Ellis Brooks Sayre, Canandaigua, N. Y. (license, New York, 1877); veteran of the Civil War; practitioner for nearly half a century; died, October 13, aged 73.

Edgar William Amman, St. Louis; St. Louis University School of Medicine, 1904; was shot through the head and killed, near Cairo, Ill., October 22, aged 41.

Harry A. Bond, Dillon, Mont.; College of Physicians and Surgeons, Keokuk, Iowa, 1889; died, October 15, from carcinoma, at the home of his sister, aged 62.

Samuel B. Robinson, Warsaw, Ky.; Pulte Medical College, Cincinnati, 1881; member of the Kentucky State Medical Association; died, October 11, aged 64.

William H. Burt, Atlanta, Ga.; Atlanta Medical College, 1880; former member of the state legislature; died, October 16, following a long illness, aged 63.

Thomas Lee Chambliss, Hugo, Okla.; Fort Worth (Texas) School of Medicine, 1907; died, recently, from complications resulting from influenza, aged 41.

Reuben B. Rhoads, Boyertown, Pa.; Jefferson Medical College, Philadelphia, 1857; veteran of the Civil war; died, October 7, from senility, aged 90.

John F. Harris, La Crosse, Wash., American Medical College, St. Louis, 1882; died, October 6, at the St. Ignatius Hospital, Colfax, Wash., aged 68.

Clayton M. Paschal, Bedford, Iowa; College of Physicians and Surgeons, Keokuk, 1875; twice member of the state legislature; died recently, aged 67.

Charles Edward Crandall, Schuylerville, N. Y.; Albany Medical College, Albany, N. Y., 1873; died, October 12, from cerebral hemorrhage, aged 73.

Annie F. Norton Moore, Clarkdale, Ariz.; Detroit Homeopathic Medical College, 1872; died, October 16, from carcinoma of the breast, aged 75.

Andros W. Hoyt, Collegeview, Neb.; Drake University College of Medicine, Des Moines, Iowa, 1892; died, August 14, at Davenport, Iowa, aged 66.

William A. Barclay, Chicago; Chicago Physiomedical Institute, 1897; formerly a newspaper man; died, October 24, from heart disease, aged 64.

William H. Hedrick, Wheatland, Ind. (license, Indiana, 1897); veteran of the Civil war; died, October 13, from chronic nephritis; aged 82.

Wilbur F. Buren, Princeton, Mo.; Medical Department University of Iowa, Keokuk, 1867; died, August 22, from chronic nephritis, aged 80.

Edward Gerald Sepple, Chicago; Dearborn Medical College, Chicago, 1904; University of Illinois, Chicago, 1906; died, October 19, aged 47.

John Anthony Colbourne, Braidwood, Ill.; Northwestern University Medical School, Chicago, 1894; died, October 16, at Los Angeles, aged 59.

Joseph S. Stewart, Homestead, Pa.; Jefferson Medical College, Philadelphia, 1877; former burgess of Homestead; died, October 18, aged 72.

Frank L. Bradley, St. Louis Park, Minn.; Rush Medical College, Chicago, 1869; practitioner for over fifty years; died, October 12, aged 77.

Oregon C. Blaney, Portland, Ore.; Willamette University Medical Department, Salem, 1880; died, October 9, after a long illness, aged 70.

Harry W. Patrick ✱ Lakewood, Ohio; Baltimore Medical College, Baltimore, 1893; died, September 6, from cerebral hemorrhage, aged 55.

Joseph Weyerhorst, Great Falls, Mont. (years of practice); owner of the Weyerhorst Hospital, Great Falls; died, October 10, aged 50.

Simeon Nicholas Andre, Petrolia, Pa.; Jefferson Medical College, Philadelphia, 1893; died, August 19, near Buena Vista, aged 52.

McKendree Green, Pleasant Lake, Ind. (license, Indiana, 1897); died, October 15, at the Odd Fellows' Home, Greensburg, aged 78.

John Henry Murphy, Boston; Medical School of Harvard University, Boston, 1893; died, October 6, from pneumonia, aged 78.

Charles B. Masser, Fruita, Colo. (license, Colorado, 1890, years of practice); died, October 5, in a hospital at Pueblo, aged 82.

Hudson G. Willse, North Bay, Wis.; University of Buffalo, N. Y., 1883; died, October 18, from a complication of diseases, aged 70.

John A. Schmidt, Brooklyn; Long Island College Hospital, Brooklyn, 1892; also a dentist; died, October 19, aged 57.

William Penn Buck, Elizabethtown, Pa.; University of Pennsylvania, Philadelphia, 1869; died recently, aged 75.

Daniel S. Grossman, Leighton, Pa.; University of Pennsylvania, Philadelphia, 1877; died, October 8, aged 72.

Frank Jackson George ✱ Okeana, Ohio; Medical College of Ohio, Cincinnati, 1894; died, October 12, aged 55.

Daniel George Weymouth, Spencer, Ind.; Bennett Medical College, Chicago, 1913; died, September 26, aged 34.

Thomas Hallanan, Barboursville, W. Va.; Cincinnati College of Medicine, 1852; died, October 15, aged 55.

John Thomas Bell, Walnut Ridge, Ark.; University of Nashville, Tenn., 1874; died, October 16, aged 72.

Peter R. Hatch, Youngsville, N. C.; College of Physicians and Surgeons, Baltimore, 1883; died recently.

Patrick Henry Manion, Egota, Minn.; Rush Medical College, Chicago, 1890; died recently, aged 57.

W. J. Redditt, Carrollton, Miss.; Louisville (Ky.) Medical College, 1872; died, August 13, aged 72.

Melville R. Shepherd, Sublime, Texas (years of practice); died, October 15, aged 58.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Salt-Sulphur Water.—The Salt-Sulphur Water Co., Excelsior Springs, Mo., in August, 1920, shipped five barrels of Salt-Sulphur Water which were declared adulterated and misbranded under the Food and Drugs Act. It was declared adulterated for the reason that "it consisted wholly or in part of a filthy, decomposed, and putrid animal or vegetable substance." It was declared misbranded because of the following statements regarding the alleged curative effect of the preparation:

"This Water Is A Recognized Remedy . . . Invaluable In The Treatment Of Inflammatory And Catarrhal Conditions Of The Stomach And Intestines As Well As Diseases Of The Liver. Its Continued Use Stimulates To Health Action The Stomach, Liver and Kidneys."

These statements were declared false and fraudulent and "intended to be of such a character as to mislead the purchaser." In March, 1921, judment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9333; issued Sept. 24, 1921.*]

Pildoras Uriseptic.—A quantity of this product, shipped by Davis & Lawrence Co., New York City, and the France and New York Medicine Co., New York City, respectively, from New York State to Porto Rico, was declared misbranded. Government chemists reported that analysis showed the pills to consist essentially of cubebs, methylene blue, salol, and kava kava. Some of the claims made for these pills were:

"Anti-Gonorrheal, Diuretic, Antiseptic, Resolvent."
"Cannot be surpassed by any other for the treatment of Gonorrhea, or in the treatment of chronic or acute inflammations of the Bladder or urethra and other forms of secondary diseases which generally result from blenorrhagic infection."

These and similar claims were declared false and fraudulent and in March, 1921, the Davis & Lawrence Co. entered an appearance as claimant but failed to deny the allegations contained in the libels. Judgment of condemnation and forfeiture was entered and the court ordered that the product be released to the claimant on the payment of the cost and the execution of a bond.—[*Notice of Judgment No. 9348; issued Sept. 24, 1921.*]

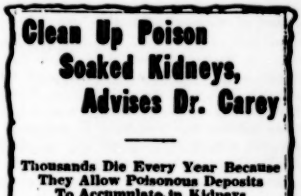
Boquette's Family Remedy.—The Boquette Remedy Co., Council Bluffs, Iowa, shipped a quantity of "Boquette's Family Remedy" which the federal authorities declared was misbranded. The article was labeled in part:

"For Chills and Fever, external and internal. For Rheumatism, Neuralgia, Lumbago, Heart Trouble . . . Indigestion, Catarrh, Kidney Trouble, Stomach Trouble, Headache, Grippe or Blood Diseases."
"It is a fine purifier and Nerve Tonic."
"For Female Complaints, Stomach Trouble, Bladder Troubles, Sore Throat, Kidney Troubles, Nervous Prostration, Headaches, Lame Back, Hay Fever."
"For Goitre . . . Coughs, Tuberculosis, Liver, Piles."

In addition, the stuff was said to be a "Compound of Roots, Herbs, Leaves, Barks and Berries." When analyzed by the federal authorities the preparation was found to consist essentially of a solution of Epsom salt and saltpeter in water. The therapeutic claims were declared false and fraudulent and the claim relative to its alleged vegetable origin was declared false and misleading. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9386; issued Oct. 15, 1921.*]

Volta Powder.—Charles A. and Alfred N. Gianelli, trading as the Volta Co., Buffalo, N. Y., shipped in May and June, 1918, a quantity of "Volta Powder" which was misbranded. The federal chemists reported that analysis showed the powder to be essentially a mixture of free sulphur, impure iron (ferric) oxid, and a trace of essential oil. The preparation was sold as an effective treatment, remedy and cure for acute, inflammatory and chronic rheumatism, sciatica, gout, all forms of neuralgia, cold feet, insomnia, general debility, la grippe, and malarial fever. It was also said to improve the complexion! These claims were declared false and fraudulent and in May, 1921, the defendants pleaded guilty and a fine of $25 was imposed.—[*Notice of Judgment No. 9380; issued Oct. 15, 1921.*]

Carey's Marsh Root.—A quantity of "Dr. Carey's Marsh Root" was shipped by the Carey Medical Corporation, Rochester, N. Y., in July, 1920. Analysis of a sample by the Bureau of Chemistry showed the product to consist essentially of plant extractives, including alkaloidal material, sodium and potassium salts, salicylates, aromatic oils, sugar,



Clean Up Poison Soaked Kidneys, Advises Dr. Carey

Thousands Die Every Year Because They Allow Poisonous Deposits To Accumulate in Kidneys

Don't flush your kidneys with harsh makeshifts, says Dr. Carey; they are too frail and delicately constructed to treat them rough.

For 40 years I have been prescribing Marshroot for kidney and bladder sickness, and now that I have retired from active practice I have made arrangements with leading druggists to dispense this wonderful prescription at a moderate price.

Beware of kidney disease—thousands die of it every year who ought to be enjoying the blessings of life and health!

glycerin, water and alcohol. The presence of juniper, saw palmetto, buchu, uva ursi, and belladonna was indicated. Some of the claims made for the preparation were:

"Restores impoverished blood to the rich, red condition of perfect health.
"Marsh Root removes the cause."
"This splendid remedy has proven itself of great value in the treatment of Bright's disease, diabetes, all urinary troubles, retention, scanty, stoppage, too frequent and brickdust.
"Catarrh of the bladder, gravel and gall stones are positively relieved by this treatment."
"There are thousands alive today who would be in their graves, caused by the awful effect of kidney and bladder trouble, if they had not used this wonderful medicine, Marsh Root."

Many other claims of the same character were made in or on the trade package, all of which were declared false and fraudulent. In March, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9334; issued Sept. 24, 1921.*]

Sterling Injection.—A quantity of "Sterling Injection," shipped in March, 1920, by the Western Wholesale Drug Co., Los Angeles, Calif., was declared misbranded by the federal authorities. When analyzed by the Bureau of Chemistry, it was shown to consist of a water-solution containing opium, borax, and a trace of sulphate. It was falsely and fraudulently recommended as a treatment for gonorrhea. In February, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9352; issued Oct. 15, 1921.*]

Correspondence

"USE OF HOLLOW TUBE FOLLOWING SUBMUCOUS RESECTION OF NASAL SEPTUM"

To the Editor:—The suggestion of Dr. H. M. Goodyear (THE JOURNAL, Oct. 1, 1921, p. 1103), of inserting a piece of rubber tubing along the floor of the nose after the submucous resection of the nasal septum, is a good one for the comfort of the patient so far as breathing is concerned, if one insists on packing the nose after the operation. It will not, however, prevent the extreme headache that many patients suffer as a result of the pressure of the pack. I do not agree that packing the nose after the operation is at all necessary. I also take exception to the statement that, on the whole, the end-results are better after packing than after not packing. My experience has been just the contrary. To believe that packing the nose will prevent the formation of a hematoma is a fallacy. It will form notwithstanding the pack, or soon after the pack is removed at the end of twenty-four hours. Most men pack (1) to prevent bleeding, and (2) to keep the mucous membranes in apposition. The fact of the matter is that patients not packed do not bleed unless the mucous membrane has been badly torn, and the parts remain in apposition just as well as in the packed cases. Furthermore, it often occurs that, after the packing is removed, so severe a hemorrhage follows that repacking is absolutely urgent. In my experience without packing, not only has the bleeding been practically nil but such an indication for urgent packing has never happened. My practice has been to place one or two silk sutures in the line of incision, but this procedure is not necessary to insure an ideal result. There is no comparison in the general comfort of the patient with packing or without it.

PHILIP FRANK, M.D., St. Louis.

[NOTE.—The foregoing letter was referred to Dr. Goodyear, author of the article criticized. He replies:

"Dr. Frank states that the tube will not prevent headaches following submucous resection. This is true, and I made no statement to the contrary. Most patients have a headache following complete cocainization of the nose, whether packing is used or not.

"The formation of a hematoma while the packing is in situ does not occur unless the packing is carelessly inserted, leaving a considerable area of septum uncovered on one side or the other. A hematoma can form, no doubt, after the packing is removed but, fortunately, this rarely happens.

"Petrolatum gauze (heavily saturated) is used for packing; thus, at the end of twenty-four hours it is easily removed, and I have never had sufficient bleeding follow to require repacking.

"Most septums requiring operation have a deviation high in the region of the middle turbinates and, almost without exception, these cases have a spur or thickened ridge down very near the floor. I find it is the removal of this lower portion of the septum that causes most of the bleeding. If the lower portion of the septum is not completely removed, the indication for packing is greatly reduced, but the operation is incomplete."—ED.]

DANGERS OF PHOSPHORUS IN FIREWORKS

To the Editor:—Last July some fireworks manufactured by the Essex Specialty Company, Newark, N. J., found their way into the hands of my oldest child. An unburned portion was picked up by my youngest child, aged 15 months. He ate it and died from the effects four days later. The particular piece is called "Devil on the Walk," and is apparently made mostly of phosphorus. I am informed that there is a federal law prohibiting the sale of phosphorus matches. If there is no law prohibiting poisons in playthings it would seem that there should be. I understand that one of your activities is to become interested in such matters. It occurs to me that you would be doing a good service to use your influence in establishing a law which would prevent the sale of such materials, and if such a law already exists to see that it is more rigidly enforced.

W. C. STACY, M.D., Avery, Idaho.

[COMMENT.—In order to secure more definite information relative to this case, THE JOURNAL suggested that the physicians in attendance on the child make a brief report. Dr. C. Busey, Avery, Idaho, states: "E. B. S., aged 15 months, while playing at his home, July 1, found fragments of previously exploded fireworks, sold under the name of "Devil on the Walk." The child's mother noticed red stains about the mouth and on the fingers, and gave it an emetic. When I saw the patient about four hours later he was playing and apparently well. During the following four days he ran the usual course of phosphorus poisoning, dying on the evening of the fourth day."

Dr. P. D. McCornack, Spokane, Wash., reports: "I saw the Stacy baby, who was suffering from an acute phosphorus poisoning. He gave a typical history of poisoning, and the course was extremely typical. He was much stimulated the day after he had taken the poison, but soon became ill, gradually became comatose, and died. The appearance of the mouth, vomitus, etc., were characteristic. Postmortem examination was not made, so we do not have any pathologic findings to report. I think it would be wise to prohibit the manufacture of such fireworks when they are dangerous to the lives of children."—ED.]

ARGYRIA FROM ARGYROL

To the Editor:—Last summer Mr. T. R. consulted me as to his general physical condition. He appeared cyanotic, his face, lips and hands being of a peculiar slate-blue color. A faint systolic murmur was heard at the apex of the heart after exercise; otherwise the general physical examination was entirely negative. His previous history revealed nothing especially relating to such a condition except the fact that nine years before this consultation he had had a sore throat, and was advised by his physician to use argyrol locally. He had continued the use of this preparation twice daily for a year. He then noticed that he was turning blue and discontinued its use. He has, however, retained this appearance.

HYMAN I. GOLDSTEIN, M.D., Camden, N. J.

POLYMORPHISM AMONG BACTERIA

To the Editor:—Your editorial (October 8) on "Pleomorphism Among Bacteria" I believe is not in accord with modern observations. Monomorphism of the tubercle bacillus was taught soon after its discovery, but for the last thirty years all investigators speak absolutely of pleomorphism. As early as 1884, Petrone observed branching forms, as did Nacard, Roux, Kline, Dixon and a host of others later. I refer here only to the tubercle bacillus, because you make special reference to Robert Koch. Koch, then the foremost bacteriologist of his time (1882), was a discoverer and not a follower. Though at the beginning of his investigations he believed firmly in the monomorphism of the bacillus, yet for many years before his death he was thoroughly conversant with the various changes that the bacillus may assume under different cultural environments. "Until recently there were few American textbooks that did not adhere to the rigid monomorphism that had been taught in Germany." This is the closing statement in your first paragraph. No! No! Not American textbooks on tuberculosis! In 1909 (some twelve years ago) Dr. Arnold C. Klebs compiled a textbook on tuberculosis, the first chapter of which was by Prof. M. P. Ravenel, at that time a teacher at the Washington Univer-

V. 192

sity, St. Louis. On page 15 he writes: "Longer forms are sometimes met with. The rods are straight or curved and occur single, in pairs or in small bundles. In old cultures, filamentous clubbed and branching forms are not infrequently seen (see morphology of the tubercle bacillus)." This undoubtedly bespeaks the recognition of the polymorphism of the tubercle bacillus in this country for more than twelve years. We have taught for many years in this country that the tubercle bacillus is a parasite midway between bacteria and streptothrices and that, judging from its pleomorphism, it is undergoing a cycle to a higher development, a tuberculomyces, approaching the ray fungus.

JOHN RITTER, M.D., Chicago.
Instructor in Tuberculosis,
Rush Medical College.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MEDICAL EDUCATION—"STATE MEDICINE"—COMPULSORY HEALTH INSURANCE

To the Editor:—1. How many physicians in the United States are now engaged in private practice as independent practitioners, and how many are full-time employees of organizations? My reason for asking this question is this: In this city there was but one physician fifteen years ago who was in the employ of a firm, while today there are about fifteen physicians who are full-time employees. I was wondering if this tendency is more or less general. Is the "private physician" gradually disappearing?.

2. Suppose a young man, a graduate of the high school, determines to study medicine. What will be the approximate cost from the time he leaves high school until he is finally enabled to enter upon practice?

3. Compared with ten years ago, are there fewer medical students: if so, what is the percentage of decrease?

4. What is the present attitude of the American Medical Association on the question of state medicine, or compulsory health insurance?

CHARLES S. BOSENBURY, M.D., South Bend, Ind.

ANSWER.—1. It is impossible to state the relative number of physicians engaged in general practice as compared with those holding full-time employment with industrial organizations.

2. The approximate cost per year in premedical colleges for board and room, laboratory and other fees, textbooks, laundry, etc., but exclusive of any tuition fees—not charged in state universities—varies from $435, the lowest estimate, to $645, a generous allowance. The total for the two years, therefore, will range from $870 to $1,290. For the medical course, including tuition fees, the expenses range each year from $550 to $700, or, for the four years, the total would be from $2,200 to $2,800. In the hospital intern year the students' expenses are invariably paid, and in many instances salaries in varying amounts are paid. There is, therefore, no financial expense for this year. The total cost, for the seven years varies from $3,070 to $5,000. The minimum figures given can be still further reduced by students who work for all or part of their way, and many are doing this, particularly in the premedical college course. The figures, also, do not make allowance for the approximately 500 scholarships now available in the better medical schools, which usually cover the students' tuition and, in some instances, their other expenses also.

3. Figures showing the students enrolled in medical colleges each year since 1900 are given in Table 4, page 527, of THE JOURNAL, Aug. 13, 1921. It will be noted that from 1904 to 1919 there was a decrease from 28,142 to 13,052, or a decrease of 53.6 per cent. At the same time, however, the number of students in the better grade medical colleges increased from 1,761, or 6.2 per cent. of all students enrolled, to 14,319, or 96.1 per cent. of all students enrolled. The decrease, therefore, was in the number of students enrolled in the lowest grade medical schools. It will be noted, also, that the annual enrolment since 1919 is again on the increase, and reports in regard to premedical classes indicate that the increase is to be continued.

4. Our correspondent apparently regards "state medicine" and "compulsory health insurance" as synonymous terms. "State medicine" as it is used at present is a vague term and may have any meaning which one chooses to give it. Until it is defined and the definition generally accepted, any intelligent discussion involving the use of this term is impossible.

At the Boston session, June, 1921, a number of resolutions on various phases of "state medicine" were introduced and referred to the Reference Committee on Legislation and Public Relations. The report of this committee was considered by the House of Delegates in committee of the whole, and the following resolution was finally adopted as a substitute for all the resolutions introduced.

Resolved, By the House of Delegates of the American Medical Association, that it approves and endorses all proper activities and policies of state and federal governments directed to the prevention of disease and the preservation of the public health.

Compulsory health insurance is a definite proposition. The attitude of the American Medical Association on it is also definite. At the New Orleans session in 1920, the following resolution was adopted by the House of Delegates.

Resolved, That the American Medical Association declares its opposition to the institution of any plan embodying the system of compulsory contributory insurance against illness or any other plan of compulsory insurance which provides for medical service to be rendered contributors or their dependents, provided, controlled or regulated by any state or the federal government.

CRITICISM OF REMEDY FOR WORMS

To the Editor:—Please comment on the following prescription, particularly as to its safety. Kindly omit my name and address.

		Gm. or Cc.		
℞	Male fern, oleoresin	7		3ij
	Chloroform	5		m xc
	Croton oil		25	m iv
	Castor oil to make	60		3ij

M. Sig.: Adult dose: after a light or no supper the night before, give one half or two thirds of entire amount. Give remainder after two hours unless there is marked cathartic effect. Children from 10 to 14, one-half adult dose. Children under 10, one-fourth adult dose.

P. S. C., Vt.

ANSWER.—This is an efficient and rather heroic, though safe combination. The maximum safe dose of oleoresin of aspidium is 8 gm., or 2 drams, which, it will be seen, is not exceeded. Chloroform has been used as a tapeworm remedy in doses of 4 c.c. (60 minims), a quantity contained in two thirds of the entire amount. The use of another 2 c.c., or 30 minims, two hours later would be unobjectionable, as most of the first dose would have been eliminated. The dose of croton oil is somewhat excessive though by no means dangerous, as 20 minims constitute a fatal dose. The caution not to use the balance of the dose if there is marked catharsis would prevent extreme and exhaustive purgation. The warning against male fern with castor oil, contained in some textbooks, is based on theoretical rather than practical considerations. Clinicians of great experience, such as H. Lenhardt and Penzoldt, employ it by preference in connection with male fern.

It is probable that the remedy would be improved if the cathartic were given one or two hours after the anthelmintic and the chloroform were omitted. Direct combination of the anthelmintic with the cathartic is somewhat irrational, as the evacuant would, by hurrying along the contents of the bowel, tend to shorten the period of exposure of the tiny head of the worm, to the poison, and might thus actually protect the worm against the remedy. However, if the chloroform is employed, combination with oil would be required to protect the stomach against excessive irritation.

COSMOPOLITAN CANCER RESEARCH SOCIETY

To the Editor:—In connection with the Cosmopolitan Cancer Research Society propaganda I send you a clipping taken from the New Orleans *Times-Picayune*, Oct. 4, 1921. This does not appear as a paid advertisement, but is run as a "reader."

RALPH B. RANEY, M.D., Crowley, La.

ANSWER.—The clipping sent in by Dr. Raney is a news item entitled "Prize of $100,000 Offered for Medical Cancer Cure." The item, apparently, was sent out by a news agency, as it appeared in newspapers fairly well scattered over the country. This would seem to indicate that the press agent of the Cosmopolitan Cancer Research Society (discussed in the Propaganda department of THE JOURNAL, Sept. 3, 1921) is earning his salary.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 8-9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville; Sec., Homeo. Bd., Dr. Geo. M. Love, Rogers; Sec., Eclectic Bd., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith.

CONNECTICUT: Hartford, Nov. 8-9. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, Nov. 8. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, Dec. 13. Sec., Reg. Bd., Dr. P. S. Downs, Dover; Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

KENTUCKY: Louisville, Dec. 6. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

LOUISIANA: New Orleans, Dec. 1-3. Sec., Dr. Roy B. Harrison, 1551 Canal St., New Orleans.

MAINE: Portland, Nov. 8-9. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.

MARYLAND: Baltimore, Dec. 13. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

MASSACHUSETTS: Boston, Nov. 8-10. Sec., Dr. Walter P. Bowers, State House, Boston.

NEBRASKA: Lincoln, Nov. 14-16. Sec., Mr. H. H. Antles, Capitol Bldg., Lincoln.

NEVADA: Carson City, Nov. 7. Sec., Dr. Simeon L. Lee, Carson City.

NORTH CAROLINA: Greensboro, Dec. 3. Sec., Dr. Kemp P. B. Bonner, Morehead City.

OHIO: Columbus, Dec. 7-9. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

SOUTH CAROLINA: Columbia, Nov. 8. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, Nov. 15-17. Sec., Dr. T. J. Crowe, 918-19 Dallas County Bank Bldg., Dallas.

VIRGINIA: Richmond, Dec. 13-16. Sec., Dr. J. W. Preston, McRain Bldg., Roanoke.

PROVINCIAL REPORT IN BRITISH COLUMBIA ON DRUGLESS HEALERS

Legislative Assembly of British Columbia by Select Committee Investigates Application of Drugless Healers to Secure Unrestricted Practice

The recent attempt of the chiropractors, drugless healers and optometrists to secure special legislation for the unrestricted practice of their respective arts in British Columbia was opposed by a committee consisting of representatives of the Council of the College of Physicians and Surgeons of British Columbia, the British Columbia Medical Society and the Vancouver and Victoria Medical Societies. This representative committee determined that it was obviously their duty to protect the public and to demand from any cult practicing medicine that its members should show some familiarity with the systematized knowledge of the human body in health and disease. During the revision of the medical act, in 1909, the osteopaths secured recognition, but only by conforming to the provisions of the act and by qualifying in the canonical subjects, as well as in passing examinations in their own peculiar practice. The precedent seemed adequate for the present case, satisfying the demands of the profession. Apparently the committee of the legislature which considered the question was of the same opinion, as the following unanimous report will show.

The Report

Legislative Committee Room,
March 29, 1921.

Mr. Speaker:

Your committee appointed to inquire and report in respect to the proposed drugless healing bill, being No. 23, and the proposed chiropractic bill, No. 24, begs to submit as its final report the following—

As on the inquiry into the proposed optometry bill, exhaustive evidence was also presented to the committee, for and against these proposed bills. The committee had the views, apparently, of the most prominent representatives of the drugless healing art and of the best practitioners in chiropracty, in support of these measures, while the Medical Council, represented by prominent and reputable members of the medical profession, opposed both bills.

EVIDENCE CAREFULLY CONSIDERED

Your committee have taken great pains to consider with the utmost care the evidence adduced and the representations made, particularly as a great many estimable citizens have apparently received benefit from the chiropractors. Whether these alleged results are more imaginary than real or whether they have yet been sufficiently tested over a long enough period of time probably remains to be seen.

As in the consideration of the optometry bill—so in respect of these two bills—your committee had the benefit of the exhaustive report of Mr. Justice Hodgins, referred to in the previous report of this committee. His report is voluminous and is quite applicable to the principles under consideration.

SCIENTIFIC BASIS OF CLAIMS QUESTIONED

The general education obtained in Canada through the medical faculties of the universities is, your committee believes, well abreast of the times. The course has been gradually enlarged to keep pace with expanding medical knowledge, and research institutions in different parts of the world are engaged in enlarging the boundaries of medical knowledge, with an open mind to new discoveries possessing merit. On the other hand, it is difficult, from the evidence submitted, oral and documentary, to ascertain the educational standards or scientific knowledge of those who profess to find in the practice of chiropracty and drugless healing a cure for a great many, if not all ills.

EQUIPMENT AND TIME FOR STUDY INADEQUATE

From the curriculums before us of several American institutions and the statements made it would appear that the standards required and the length of time required for study vary, and on the whole are not long enough to afford sufficient training. It would appear, too, that these schools are without the necessary equipment. It is therefore not possible to say that the medical attainments of those now asking for a change in the law are sufficiently high.

The question to be decided by the committee is this: Have the chiropractors and the drugless healers made out a case for an alteration of the present law, so that without hindrance they may be permitted to practice the healing art?

CLAIM HISTORIES AND DIAGNOSIS VALUELESS

One of the leading chiropractic colleges in the United States is the "Palmer Institute." Dr. B. J. Palmer, the head of this institution, in giving evidence in the case of the State vs. Jansheski, in December, 1910, when asked whether when a patient came to a chiropractor, he was asked the history of the case, answered: "No, because it be of no value;" and in answer to why that was so, he said: "A person comes to us without telling us what the trouble is; it makes no difference whether a physician has already diagnosed it as insanity, appendicitis, indigestion, or anything they call it. The chiropractor needs to know nothing about that case from a physician's standpoint; it is immaterial, yet he can take that same case, put it down on his benches and analyze that spine just as accurately without knowing those things; in fact, sometimes, I think better. . . . It is not essential the chiropractor should know what the patient said he had, but you can adjust the current for it running into the organ, and the patient is well. That is where chiropractics becomes purely a mechanical proposition, a mechanical and electrical-making circuit proposition in a man."

The definition of this treatment in technical terms was given by McNamara, of the Universal Chiropractic College, Davenport, Iowa, as follows: "The theory sustaining this system presumes that in consequence of displaced vertebra the intervertebral foramina (openings) are occluded (closed), through which the spinal nerves pass. . . . In this way the nerves are pinched and chiropractors assume that such pinching is responsible for 95 per cent. of all diseases. Chiropractic concerns itself with an adjustment of the subluxations, thus removing the pressure on the nerves."

CLAIM SUBLUXATIONS OF SPINE CAUSE OF ALL DISEASES

Reducing it to simple language, the chiropractors affect to find traces of practically all diseases in subluxations of the spine, and their treatment is confined to the manipulation of the spine by hand. It is rather a shock to even the superficial knowledge of the laymen, to be told that 95 per cent. of all diseases finds a manifestation in the spinal column. The assertion is emphatically disputed by members of the medical profession, and if knowledge, training, and research is necessary to arrive at a conclusion on such a question then certainly the medical fraternity are better able to give an opinion than the followers of these cults.

One of the chiropractors examined claimed to have cured such a wide variety of diseases as chronic colitis, kidney stone, dropsy, chronic biliousness, rheumatism, chronic ulcer, ulcerated stomach, tubercular spine, rickets, etc. These dis-

V. 192

eases, they say, manifest themselves by a displacement of the spine. The spread of disease by germs would appear to be of secondary consideration. In fact, one chiropractor stated that, granted the lung was normal, one could swallow tubercular germs by the million and never take the disease. The same witness, speaking of kidney stone, averred that a man's vertebrae must show a subluxation, otherwise he would not have a stone in the kidney.

MUST MAINTAIN HIGH STANDARD OF KNOWLEDGE

It would seem apparent that the health and safety of the public is involved in the indiscriminate application of theories such as these to the cure of disease. Public safety is indebted to medical science for the prevention of the spread of contagious diseases; for sanitary regulations and hygienic precautions, the failure to observe which would be disastrous. The standard of knowledge must be maintained at a high point and there must be some recognized body who from training and experience are competent to fix these standards. That recognized body hitherto has been the Medical Council, and your committee can see no reason from the evidence adduced why it should not continue the exercise of these functions in the future.

DIAGNOSIS A FIRST ESSENTIAL

The fundamental requirement in the treatment of disease is ability to make a diagnosis. It is essential to first know what the trouble is before attempting to cure it. That involves a knowledge of and study of certain standard subjects. Your committee do not believe for a moment, from the evidence, that the only diagnosis necessary is to feel for certain alleged displacements in the spinal column.

We concur with the statement of Mr. Justice Hodgins, whose investigations occupied many months, involving personal examinations of these chiropractice institutions, that: "I cannot bring myself to the point of accepting, as part of our legalized medical provision for the sick, a system which denies the need of diagnosis, refers 95 per cent. of disease to one and the same cause, and turns its back resolutely on all modern medical scientific methods as being founded on nothing, and unworthy even to be discussed."

Your committee do not doubt that beneficial results have been obtained from the treatment of chiropractors. They have no reason to doubt the word of estimable people who say so. It must be borne in mind, however, that the most of these are chronic cases, and it sometimes happens that by the power of suggestion good results are obtained, particularly in neurotic cases. The committee were given instances of marvelous cures of shell shock cases during the war as a result of mental suggestion. No doubt new discoveries have been made, and will continue to be made, in medical science; but it is hardly likely that any discovery will enable us to safely dispense with the elementary requirement of diagnosis in the treatment of diseases, and to diagnose it is necessary to have a wider knowledge of the anatomy and of fundamental subjects than simply a certain familiarity with the spinal column.

ALL HEALERS MUST QUALIFY UNDER MEDICAL ACT

The chiropractors object to the drugless healers bill, and the latter object to the proposed legislation of the former on the ground that their bill is all-inclusive. It is sufficient to say, in reference to the drugless healing bill, that the various branches of study pursued by them are simply special courses which are recognized in medical work. This is true of all the branches of treatment referred to in this bill, except chiropracty. These different types of treatment are carried on by the drugless healers at present really as laymen without sufficient qualifications for the work. They should qualify under the "Medical Act," and then if they so desire specialize in these particular branches.

Notwithstanding the foregoing views, the committee do not feel that chiropractors or drugless healers should be prevented from practicing. We only say that they should first be qualified. They should, before being permitted to practice within the province, pass an examination satisfactory to the Medical Council, on the following primary subjects: Anatomy, physiology, chemistry, toxicology, pathology, bacteriology, histology, neurology, physical diagnosis, obstetrics, gynecology, minor surgery, hygiene, and the principles and practice of chiropractic. Before taking this examination they should be graduates of a recognized school or college of chiropractic which at least teaches a residence course of three years of six months each year. The Medical Council in prescribing examinations for applicants for registration as chiropractors should appoint at least one of their number to set the examination in the principles and practice of chiropractic. After passing the examination outlined above they should be registered as a member of the college.

NO DISCRIMINATION IN EXAMINATION

The suggestion that chiropractors would be discriminated against in examinations is not based on fact, as the method of conducting examinations by the Council, by number rather than by name, makes this impossible.

Your committee, therefore, recommends that the "Medical Act" be amended to include these provisions. It would be a guarantee to the public that all practitioners were qualified practitioners—a most desirable thing. The chiropractors would prefer to set their own standards and have a statute providing for a governing body of its own. This would not be safe, or in the public interest. They are doing medical work, curing or attempting to cure disease. It is the accredited representatives of the medical profession—if they are honest and fair, and there has been no suggestion to the contrary—who are best fitted to prescribe the necessary standards.

This report represents the unanimous views of the committee.

M. A. McDONALD, Chairman.

Countersigned: A. M. MANSON, Speaker.

Book Notices

ARABIAN MEDICINE. Being the Fitzpatrick Lectures Delivered at the College of Physicians in November, 1919, and November, 1920. By Edward G. Browne, M.B., F.R.C.P., Sir Thomas Adams' Professor of Arabic in the University of Cambridge. Cloth. Price, $4.50. Pp. 138, with 1 illustration. New York: The Macmillan Company, 1921.

These lectures, which appear simultaneously with Allbutt's Fitzpatrick lectures on Greek Medicine in Rome (delivered in 1909-1910), illustrate a striking phase of modern medicine, namely, the accomplishment of important research work by specialists outside the medical profession. In the past, physicians, beginning with Hippocrates, were the earliest workers in pure science, did most of the botany and zoology, and even made the first school arithmetics. But from the time of Pasteur on, a vast amount of original work in the fundamental sciences—anatomy, physiology, metabolism, bacteriology—has been done by the nonmedical, and such names as Valentin Rose, Steinschneider, Rhode, Ilberg and Max Wellmann, recently appointed to the chair of medical history in Berlin, suggest how much has been accomplished in this field by the classical philologists alone.

Although an M.B. and F.R.C.P., the author of these lectures has been for twenty years professor of Arabic in the University of Cambridge. Their interest, what lifts the book immeasurably above the usual perfunctory presentations of Mohammedan medicine, is that, for the first time since the days of Leclerc and Wüstenfeld, the subject has been handled by a trained Orientalist, of the quality and erudition of Burton or Gibb, Steinschneider or Nöldeke. Shunning the beaten paths, worn trite by constant repetition, our author strikes into new lines of approach which give an astonishing freshness to his theme, usually accounted one of the dullest conceivable. In four lectures of pleasantly forward gait, he contrives not only to cover his subject well, but brings out important data hitherto unnoticed by the orthodox historians. Refreshingly new are his sections on the folk medicine of the primitive period anterior to the Abbasid Caliphate, on the Prophet's medicine, on the history of the great medical school at Jundi-Shapur, on the methods of the medieval translators, on Persian medicine, as also on the many strange anecdotes and case histories showing just how the Moslem physicians practiced medicine. This, along with the fresh biographic data about Rhazes, Avicenna and other great physicians, is all original material, gathered in the author's private studies, and translated from the manuscripts by himself. Medicine is here illustrated by Arabic verses as curious and entertaining as those in Burton's Arabian Nights. In accordance with the author's preference, the book should have been entitled "Islamic" or "Mohammedan Medicine," for this strain of medicine was mainly developed by Persians and Hebrews and is "Arabic" only in relation to the language employed

in its texts. The major writers are illustrated by the analysis of only one work each, since their main achievements and the contents of their opera omnia are given in minute detail in Newberger's History of Medicine. While the bulk of the narrative is confined to the Abbasid period (750-1258) and little is said of Albucasis, Maimonides and other great figures of the Cordovan Caliphate, the book is otherwise replete with learning and well up to the mark of the best continental scholarship. Professor Browne has set a new standard by his success in rejuvenating an almost sterile theme, in an engaging narrative which can be read at one sitting. A pleasant book for an autum or winter evening, worthy of recommendation to any physician interested in the subject.

SURGERY, ITS PRINCIPLES AND PRACTICE. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery, Jefferson Medical College, Philadelphia. Volume VII. Cloth. Price, Volumes VII and VIII, $25 per set. Pp. 855, with 359 illustrations. Philadelphia: W. B. Saunders Company, 1921.

The first six volumes of this work were published in 1913 before the beginning of the war. The enormous progress made in surgery since then has prompted the editor to issue these two volumes so as to place on record the practical lessons learned by the profession during the war and to collect and present in concrete form the progress made in every division of surgery during the last eight years. Among the contributors are many well known Americans and Britishers, such as John F. Binnie, Joseph A. Blake, Hugh Cabot, John B. Deaver, Charles H. Frazier, M. L. Harris, Sir Robert Jones, the Mayos, R. Tait McKenzie, G. E. de Schweinitz, Sir Cuthbert Wallace and Sir William Thorburn. Skin conditions are discussed by dermatologists; physiologic problems by physiologists; neurologic conditions by neurologists; purely pathologic questions by pathologists. The chapter on inflammation is contributed by Adami; that on syphilis by Schamberg; that on traumatic shock by Cannon; that on traumatic hysteria by Dercum. Robert W. Lovett contributes the chapter on orthopedic surgery in civil life. Sir Robert Jones and Ernest W. Hey Groves write on military orthopedic surgery. A full discussion is presented of the organization and administration of the medical departments of the United States Army and Navy during the war by members of these services. The second volume is devoted almost entirely to surgery and measures used in connection with surgery, such as physiotherapy, radium, roentgen ray and electricity. Almost fifty pages are given over to anesthesia, local anesthesia being discussed by M. L. Harris, a well known exponent of this method. Chapters on the legal relations of the surgeon and the American Red Cross in war and peace conclude the work. Aside from the assured value of the text, one should note the many excellent illustrations, the extensive bibliography appended to each chapter, the good mechanical work, and last, but by no means least, the complete and exhaustive index.

BLIND. A Story of These Times. By Ernest Poole. Cloth. Price, $2.50. Pp. 416. New York: The Macmillan Company, 1921.

Those who have read "The Harbor" and "His Family" know that Mr. Poole is a novelist with a social mind. The present novel continues the earlier manner of the author with even greater emphasis on the social view of life; it is reviewed here primarily because of its medical and social interest. Next to the blind central figure of the story, who writes autobiographically, the most important character is a physician, Steve McCrea, one of the finest medical figures painted in modern fiction. We read of his youth, of his medical training, of his development into a surgeon, of his loss to surgical science through an infection sustained during an operation, and of his transformation into a psychotherapist. Medical incidents are abundant throughout the novel. Early in his career McCrea is called on for an emergency obstetric case; he succeeds. Later the famous New York specialist arrives. "With an expression of grave concern, he prescribed a course of treatment to repair the 'damage done.'" Steve, he ignored completely. The next chapter describes the life of the young medical man in a great New York hospital, and case after case is followed into the home for the social atmosphere. The beginnings of a reaction of the poor to their miserable surroundings are traced, and we come eventually to a meeting of the physicians in one section of New York to discuss some social question affecting the medical profession. A Russian physician feels that the state should support the physicians in order that they be not compelled to violate the ethics of their profession. "The city should pay us for our work," he says, "so we can get out of the rush for the dollar and give our whole lives to science; to study and keep ourselves up to date—and for any patient, rich or poor, give the best treatment to be had." And in the uproar that follows McCrea replies:

> How much does the mass of the people really care for their government? What have they made it? Is there such honor and wisdom in the gang at the City Hall that we doctors want to place ourselves and all our patients, rich and poor, entirely under their tender care, their wise and intelligent control? If we give the Health Department $100,000,000 to be paid in doctors' salaries, how long do you think the politicians will leave the Health Department alone?

Medical aphorisms of this character abound in the book:

> In these days if a surgeon reaches the top, he does it only by work so hard that he has not the stuff left in him to stay there more than twenty years.
>
> We propose not only to heal them after they are sick, but to keep the damn fools healthy.

When the war comes, the two chief characters go to Germany to establish a Red Cross station, and we are given an accurate picture of life in Germany during the first two years of the war. The description of the place in Germany, formerly the War Academy, where civilians came to learn of the dead and wounded, is a grim picture of Germany in wartime. Then the Americans return home and, when our country enters the war, we find them enlisted, one in France and the other for service in Russia. The description of Russia during the early days of the revolution appears to be an accurate, first hand account. The analysis of American life during the first days of the war with the boundless enthusiasm, the conscription and the drives is a penetrating psychologic study. "The whole nation," says Mr. Poole, "was unconsciously taking Christian science, treating itself in great warm waves of optimism and faith." From this point we are led onward to the making of peace and the author's belief in the slow gradual revolution which is now changing the world. He has no belief in a league of nations, in democracies or in soviets, for each is right and each is wrong, but he has real belief in the faith of humanity. The novel is one which will be read with pleasure and profit by both the public and the physician and with particular interest by the latter.

Medicolegal

Boards of Health Required to Abate Nuisances

(State ex rel. Glatfelter et al. v. Hart et al. (Neb.), 182 N. W. R. 567)

The Supreme Court of Nebraska, in holding that the relators were entitled on the pleadings to a peremptory writ of mandamus to compel the defendants constituting the board of health of Central City to abate, or cause to be abated, a nuisance, says that the ordinances of the city provided that the board of health should have full power, among other things, to abate nuisances of every description and should cause all nuisances to be abated with reasonable promptness. It was set forth that there was a pond of stagnant water near the residences of the relators which was being used as a dump for refuse which, in the process of decomposition created a breeding-place for flies, disease germs and mosquitoes, produced an offensive odor, and contaminated the water in the pond which percolated through the soil and rendered unfit for use the water in the wells of the relators, greatly endangering the health and lives of the citizens and creating a nuisance.

The court does not consider that it was necessary to make the owners of the property on which the pond was situated parties defendant. It was true that a writ of mandamus issued against the board of health would not be binding on the owners of the property, nor would the order protect the members of the board of health in their actions in abating

the nuisance, should their actions, as to property owners, later be determined to be unlawful. If the nuisance, however, actually existed, the court fails to see how the board of health would need any judgment to protect it in its actions to abate, or cause to be abated, the nuisance. It is only where it is doubtful whether a nuisance, in fact, does exist that the board of health, for its own portection, need proceed by some legal action. Here it was left entirely with the option of the board as to the manner in which the nuisance should be abated.

It was objected that the facts alleged were insufficient to show a cause of action, since the matter of determining whether or not a nuisance existed was a matter left to the sound discretion of the board, and that the court could not intervene to direct or control the exercise of that discretion. Had it appeared from the allegations that an investigation was necessary, or that the exercise of judgment would be required, in order to determine whether or not a nuisance did, in fact, exist, or had it appeared that the board had exercised its judgment and had determined that a nuisance did not exist, the objection might have been well taken; but, where the board admits a nuisance exists, and admits that by the ordinances of the city it is peremptorily commanded to abate such nuisance, and where it is not denied that its duty to do so under the law is clear, it is quite apparent that a writ of mandamus would not interfere with nor control the exercise of the board's discretion, but such a writ would simply compel the performance of a duty which the board, itself, admits devolves on it. The manner in which the nuisance shall be abated, or be caused to be abated, is within the discretion of the board, and that discretion the court cannot usurp. Nevertheless the court may order that the board act and exercise its judgment and choice of the means and manner to be adopted for the abatement of the nuisance.

It was suggested that no affirmative allegation disclosed that the board was furnished with sufficient moneys to abate the nuisance. But the board was left to decide whether it should proceed directly or should bring an action to compel the owners of the properties to abate the nuisance at their own expense, which action it no doubt had sufficient delegated authority to institute. Moreover, where the city has ordered certain things to be done and constituted the board its agent, with full power to take all measures necessary, it is to be presumed that the city has provided, or is ready to provide, for the necessary expenses for the carrying out of such measures. If the board in this instance was without funds, or the ability to procure them, that was a matter for affirmative defense.

For the same reasons, the court holds to the same effect in the companion case of *State ex rel. Glatfelter et al.* v. *Clark et al., County Board of Health*, 182 N. W. R., 569, in which, because a pond extended beyond the city limits, such part as was outside of the city was within the jurisdiction of the county board, which was required to obey a regulation of the state board of health which made it the duty of the county board to formulate rules to protect the people against communicable diseases, nuisances and the exposing of offensive matter, nuisances to be abated according to the law, and according to rules and regulations.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, New Haven, Conn., Dec. 28-30.
American Physiological Society, New Haven, Conn., Dec. 28-30.
American Public Health Association, New York, Nov. 14-18.
Am. Soc. for Pharm. and Exper. Therap., New Haven, Conn., Dec. 28-30.
American Society of Tropical Medicine, Hot Springs, Ark., Nov. 14-15.
Hawaii, Medical Society of, Honolulu, Nov. 21.
Porto Rico, Medical Association of, San Juan, Dec. 10-11.
Radiological Society of North America, Chicago, Dec. 7-9.
Society of American Bacteriologists, Philadelphia, Dec. 27-29.
Southern Gastro-Enterological Association, Hot Springs, Ark., Nov. 14-17.
Southern Medical Association, Hot Springs, Ark., Nov. 14-17.
Southern Surgical Association, Pinehurst, N. C., Dec. 13-15.
Tri-State District Medical Society, Milwaukee, Wis., Nov. 14-17.
Western Surgical Association, St. Louis, Dec. 9-10.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Internal Medicine, Chicago

October, 1921, **28**, No. 4

*Studies in Oxygen Therapy with Determinations of Blood Gases. I. In Cardiac Insufficiency and Related Conditions. A. L. Barach and M. N. Woodwell, Boston.—p. 367.
*Id. II. In Pneumonia and Its Complications. A. L. Barach and M. N. Woodwell, Boston.—p. 394.
*Id. III. In an Extreme Type of Shallow Breathing Occurring in Lethargic Encephalitis. A. L. Barach and M. N. Woodwell, Boston. —p. 421.
*Total Nonprotein Nitrogen Constituents of Blood in Chronic Nephritis with Hypertension. J. L. Williams, Chicago.—p. 426.
*Tumors from Primitive Notochord. N. D. C. Lewis, Washington, D. C. —p. 434.
*Experimental Lesions of Branches of Auriculoventricular Bundle of Dog. F. M. Smith, Chicago.—p. 453.
*Primary Hemangiolymphoma of Hemal Nodes: An Unusual Variety of Malignant Tumor. D. Symmers, New York.—p. 467.
Chemistry and Clinical Significance of Urobilin. L. Bauman, New York.—p. 475.
Study of S-T Interval in One Thousand and Twenty-Eight Electrocardiograms. J. A. Buchanan, Rochester, Minn.—p. 484.
*Perforation of Interventricular Septum of Heart. Report of Case. J. B. Youmans, Boston.—p. 495.

Oxygen Therapy in Cardiac Insufficiency.—The harmful effects produced by an insufficient oxygen supply were studied by Barach and Woodwell and evidence was obtained that an insufficient oxygen supply exists in clinical disease. In a normal man, the inhalation of oxygen for one-half hour caused an increase in the oxygen saturation of the arterial and venous blood. In a second normal individual, the inhalation of oxygen for the same period caused a very slight rise in the venous saturation, the arterial saturation not being tested. The pulse was slowed in both cases. No significant changes occurred in the blood pressure, vital capacity, electrocardiogram, venous carbon dioxid content, or rate of respiration. In seven cases of cardiac insufficiency, an anoxic (arterial) anoxemia was present in all, a stagnant (venous) anoxemia in all except one. Oxygen inhalation regularly increased the arterial saturation and also the venous saturation in all except one case of auricular fibrillation. The arterial anoxemia of acute and chronic bronchitis, and emphysema, occurring in cardiac insufficiency, was fully relieved by oxygen inhalation. The relief of the cyanosis and the slowing of the pulse were the outstanding objective changes. The blood pressure, vital capacity, arterial and venous carbon dioxid content, urinary excretion, and rate of respiration showed no definite changes from short periods of oxygen inhalation. The electrocardiogram showed consistent changes in two cases of right bundle branch block, no change in one uncomplicated case of auricular fibrillation. Subjectively, the patients usually said they felt more comfortable or that their breathing was better, but they were rarely enthusiastic.

Oxygen Therapy in Pneumonia.—Studies in oxygen therapy were made by Barach and Woodwell in ten cases of lobar pneumonia and two cases of bronchopneumonia. All had an arterial anoxemia at some stage of the disease, except one of the cases of bronchopneumonia. The patients were treated by the inhalation of oxygen. A true stagnant anoxemia was demonstrated in one of ten cases of lobar pneumonia. The difference between the arterial and venous saturation was generally normal or less than normal, indicating that a normal or increased blood flow is usually present in uncomplicated pneumonia. The most consistent changes in the clinical condition of the patient were the clearing of the cyanosis and slowing of the pulse. The respiratory rate was sometimes slowed; the mental condition of the patient was frequently improved; the dyspnea was not usually relieved. Oxygen inhalation for one-half hour was sufficient in the mild or moderate cases of anoxemia to elevate the arterial saturation and cause clinical improvement. In the severe cases, one to two hours was necessary. The effect of a single administration was, in the main, temporary. The effect of repeated and prolonged administration produced

persistent beneficial changes in the oxygen saturation of the blood, the pulse, breathing, color, comfort, and mental condition of the patient. In three patients in whom a condition of acute oxygen want followed the development of pulmonary edema, the prolonged administration of oxygen resulted in striking clinical improvement, and seemed to avert a fatal outcome. A convenient effective method of giving oxygen has been developed by the authors which does not cause discomfort to the patient.

Oxygen Therapy in Lethargic Encephalitis.—In two patients with lethargic encephalitis observed by Barach and Woodwell the development of an extreme type of shallow breathing was attended with deep cyanosis and coma. The arterial blood was markedly deficient in oxygen and contained an excess of carbon dioxid. Inhalation of oxygen greatly relieved the arterial anoxemia but was without effect on the steady accumulation of carbon dioxid. The circulation was strikingly improved in the beginning as a result of the relief of the anoxemia. Later, progressive cardiac failure occurred, apparently related to the carbon dioxid retention. It is evident that shallow respiration, if extreme, interferes not only with oxygen absorption but with carbon dioxid elimination. The probability that a terminal involvement of the respiratory center in lethargic encephalitis is at times the cause of death is suggested.

Nonprotein Blood Nitrogen in Chronic Nephritis.—Eighty-eight patients with chronic nephritis and hypertension or with myocardial decompensation were the subjects of Williams' study. Chronic nephritis with hypertension and uremia is characterized by a marked increase in the amount of the nonprotein nitrogen substances in the blood and a low phthalein excretion. Chronic nephritis of moderate degree with hypertension is associated with a moderate increase in the amount of waste nitrogen in the blood and a lessened kidney function. Cardiac inefficiency without nephritis is associated with a moderate retention of the nonprotein nitrogen substances in the blood, more particularly the uric acid. In chronic nephritis with clinical and anatomic evidence of disease there is nitrogen retention and renal inefficiency. The presence of albumin and casts in the urine is not necessarily diagnostic of nephritis nor is their absence necessarily indicative of the nonexistence of such disease. Improvement of the circulatory disturbances is accompanied by a decrease in the various nitrogenous extractives of the blood, more particularly the uric acid and this may suggest that, at least, a part of the damage done the kidneys is a sequence of the alterations in its nutrition brought about by passive hyperemia.

Tumors from Primitive Notochord.—Four cases of malignant chordoma growing from the sacrococcygeal site were studied by Lewis. In three cases there was no suggestion as to the etiology. In one case there was a strong probability of injury. Judging from the variety of diagnosis made in these cases by as many competent pathologists and surgeons, Lewis believes that these tumors are much more frequent than was formerly supposed, and they have undoubtedly occasionally been classified among the other forms of malignancy. Malignant chordoma may be considered as causing 100 per cent. mortality. Because of the extensive infiltration of the regional fascias, and the difficulty of early diagnosis, operative treatment probably rarely effects a cure, but excisions of the principal tumor mass, and intestinal resections have been beneficial in the removal of pressure and pain phenomena.

Electrocardiograms from Complete Bundle Branch Block.—Complete bundle branch block in the dog Smith asserts produces characteristic electrocardiograms that are diagnostic of the lesion. The division of the smaller subdivisions or even one or more of the main subdivisions did not change the form of the Q R S group. In some instances, however, these waves were changed to the atypical form after the cutting of subdivisions, by dilatation of the left ventricle, produced by ligating branches of the coronary arteries. This would indicate that functional change in the myocardium may influence the conduction of the impulse within the ventricles.

Hemangiolymphoma of Hemal Nodes.—Symmers has studied two malignant tumors composed of groups of lymphoid cells associated with vast numbers of blood channels, the structure of the growths, as a whole, presenting a histologic picture that suggests derivation from the hemal nodes. One of the tumors was encountered as an accidental finding at necropsy in an adult male who had met death as a result of cyanid poisoning. The growth lay in the concavity of the left side of the pelvis and was about the size of an apple and reddish gray in color, while in the immediate vicinity and extending upward to the level of the first lumbar vertebra were a score or more of enlarged nodes of the same general description. The second case was that of a child, 3 years of age, and was marked by a huge collection of reddish tumor masses in the abdomen and by an extraordinary display of metastases distributed exclusively under the periosteum of various bones. The variety of tumor described is apparently satisfactorily provided for under the appellation of malignant hemangiolymphoma or as hemangiolymphosarcoma. Among 7,000 postmortem records at Bellevue Hospital, Symmers found only these two cases.

Perforation of Intraventricular Septum of Heart.—A case is reported by Youmans presenting an interesting example of perforation of the interventricular septum of the heart in an unusual location; the heart was normal except for a limited area of sclerosis. The patient also showed slight general arteriosclerosis and diabetes mellitus.

Boston Medical and Surgical Journal

Oct. 13, 1921, **185**, No. 15

Interest of Public in Medical Education. C. F. Painter, Boston.—p. 427.
Report on Recent "Schick Test" Campaign. J. Garland, Boston.—p. 432.
Mortality in Placenta Praevia for Last Twenty-Five Years at Boston Lying-In Hospital. F. S. Kellogg, Boston.—p. 435.
Operation for Prolapsus Uteri. W. Van Hook, Chicago.—p. 438.
Procidentia Recti. T. C. Hill, Boston.—p. 440.
Pituitrin in Third Stage of Labor. R. J. Heffernan, Boston.—p. 443.
Sarcoma of Bone. T. W. Harmer, Boston.—p. 446.

Oct. 20, 1921, **185**, No. 16

Etiology and Pathology of Loss of Vision from Accessory Sinuses. L. E. White, Boston.—p. 457.
Modern Methods in Treatment of Fractures. E. A. McCarthy, Fall River.—p. 469.
*Overweight in Children. W. R. P. Emerson, Boston.—p. 475.
Hyperemotivity: Its Causes: Their Permanent Removal. T. A. Williams, Washington, D. C.—p. 477.
Motives and Emotions. W. G. Webber, Boston.—p. 478.

Overweight in Children.—While the natural tendency to excess of fatty tissue in certain children must be admitted, and this often appears as a family characteristic, Emerson asserts that overweight is far more frequently caused by habit than by heredity. Many children are allowed to indulge themselves in overeating on the ground that they were born to be fat, and that nothing can save them from this condition. A similar condition in one of the child's parents may be the direct result of like habits uncorrected in youth. Every child should be considered as an individual, and be given all possible aid to a normal and healthy development.

Canadian Medical Association Journal, Montreal

September, 1921, **11**, No. 9

*Doctrine of Prepared Soil: Neglected Factor in Surgical Infections. H. Cabot, Ann Arbor, Mich.—p. 610.
*Prenatal Negligence and Loss of Population. H. W. Hill, London, Canada.—p. 615.
Danger Signs in Diseases of Gastro-Intestinal Tract and Differential Tests. J. W. Dewis, Boston.—p. 619.
Rational Empiricism. R. D. Rudolph, Toronto.—p. 622.
Saracomatous Abdominal Testicle in Hermaphrodite. J. Halpenny and G. Kinnaird, Winnipeg.—p. 632.
Modern Medicine and General Practitioner. F. Billings, Chicago.—p. 634.
*Basal Metabolism as Guide in Surgical Treatment of Goiter with Hyperthyroidism. E. M. Eberts, Montreal.—p. 641.
Function of Infectious Disease Hospital. D. L. Richardson, Providence, R. I.—p. 652.
Detection of Lamblia (Giardia) Intestinalis by Means of Duodenal Tube. W. Boyd, Winnipeg.—p. 658.
Nature of Roentgen Rays and Some of Their Applications. L. Gilchrist.—p. 660.
Unsuspected Syphilis of Nervous System; Its Laboratory Diagnosis. H. B. Maitland, Toronto.—p. 664.
Clinical Aspect of Subacute Bacterial Endocarditis. L. W. Murray and G. W. Lougheed, Toronto.—p. 666.
Treatment of Carcinoma of Anus and Rectum. A. S. Moorhead, Toronto.—p. 673.
Chronic Pain in Right Iliac Fossa. R. R. Graham, Toronto.—p. 676.
Treatment of Psychoneuroses. G. F. Boyer.—p. 678.

Doctrine of Prepared Soil in Infections.—In the consideration of wound infection and allied conditions, Cabot says, too

much attention has been paid to the bacteria themselves and too little to the conditions which favor bacterial growth. Complete sterilization of operative fields may be judged impossible; bacteria circulate in the blood, and will find their way to those portions of the body where conditions are favorable to their growth.

Prenatal Care of Women.—Because two thirds of the total loss of infant life (including miscarriages and stillbirths) is due to prenatal or natal causes (the former greatly preponderating), Hill urges that the medical profession, as a whole, all interested citizens, and the public generally should direct their attention especially to the physical condition of women preceding the prospective births of their children—particularly with regard to disease, nutrition and heredity in the broadest senses of those terms. Because at least two thirds of the recorded loss of infants born alive at full term are due to nutritional diseases, or to infectious diseases, the former largely dependent on artificial feeding as against proper nursing with human milk, the attention of all concerned should be concentrated on securing to the young infant (*a*) human milk, (*b*) protection from infectious diseases. To secure these ends, systematic prenatal care for prospective mothers, and systematic infant feeding for young babies, should receive every encouragement from the medical profession, citizens and the general public. Boards of health should receive the hearty support and intelligent cooperation of the same groups in every effort at minimizing infections of every kind. The proper legislative and sociologic methods for prevention of the marriage of the unfit should be studied with the object of preventing the reproduction of the unfit, especially of the feebleminded. The proper training and instruction of the fit should be provided by courses in housewifery in the public schools designed for girls from the age of 12 upward, following the extremely successful plan initiated in New Zealand.

Basal Metabolism Guide in Treatment of Goiter.—Eberts reports twelve cases, seven of exophthalmic goiter and five of toxic edema in which the treatment was controlled by basal metabolic determinations.

Iowa State Medical Society Journal, Des Moines

September, 1921, **11**, No. 9

Special Field of Neurologic Surgery After Another Interval. H. Cushing, Boston.—p. 337.
Melanosarcoma of Choroid. W. H. Johnston, Muscatine.—p. 342.
Epilepsy a Symptom of Splanchnoptosis. C. A. L. Reed, Cincinnati.—p. 344.
Traumatic Pulsating Exophthalmos. G. A. May, Des Moines.—p. 346.
Torsion of Intra-abdominal Membranous Folds. J. F. Studebaker, Fort Dodge.—p. 350.
Principles of Basal Metabolism Determinations. W. H. Rendleman and J. I. Marker, Davenport.—p. 352.
Case of Lethargic Encephalitis. M. B. Call, Greene.—p. 355.
Diffuse Subepithelial Infiltration of Upper Air Passages. H. E. Thompson, Dubuque.—p. 356.
Late Development of Fusion Sense, Case Report. G. F. Harkness, Davenport.—p. 357.

Journal of Orthopaedic Surgery, Lincoln, Nebr.

October, 1921, **3**, No. 10

Osteochondritis of Upper Extremity of Femur. J. Calve, Berck-Plage, France.—p. 489.
Operation for Stabilizing Paralytic Feet. M. Hoke, Atlanta.—p. 494.
*Report of Commission Appointed to Investigate Results of Ankylosing Operations of Spine. E. G. Brackett, W. S. Baer and J. T. Rugh.—p. 507.
Fractures of Femur. End Results. M. S. Henderson, Rochester, Minn.—p. 520.
Treatment of Fractures of Femur. F. E. Peckham, Providence, R. I.—p. 529.
End Results in Fractures of Knee and Ankle. G. W. Hawley, Bridgeport, Conn.—p. 542.
Treatment of Sprain Fracture of Tubercle of Tibia in Adolescence (Osgood-Schlatter Disease). R. E. Soule, Newark, N. J.—p. 550.
Analysis of Seventeen Fractures of Neck of Femur. Z. B. Adams, Boston.—p. 555.

Results of Ankylosing Operations of Spine.—The conclusions reached by this committee are: The ankylosing operations alone, by either method, cannot be depended on to prevent the increase of destruction or deformity. Apparently, the deformity does increase equally with the operative and with the mechanical, as ordinarily employed in this country. Too much dependency cannot be placed on operation, either by fusion or inlay, to protect the spine against further development of deformity, or to prevent strain of the back in the ordinary course of daily life of the patient. So far as this fact is concerned, operative interference must be looked on as an incident in the course of treatment, and the protective and supportive treatment in children must be continued almost as long as in the cases in which operative method is not used. Not only can the inlay bend with increasing curve of the spine, and yet remain in position, but also, the inlay may break even after a considerable period. Too much dependence must not be put on the protection afforded by the inlay itself. Ankylosing operations have had apparently little effect on the production of ankylosis of the bodies of the vertebrae. Although the successful ankylosing of the posterior part of the spine by either method may not seem to arrest the development of deformity, it undoubtedly does exert a favorable influence on the acute symptoms.

Kansas Medical Society Journal, Topeka

September, 1921, **21**, No. 9

Gonorrhea of Lower Genito-Urinary Tract in Women, with Special Reference to Its Treatment. M. O. Nyberg, Wichita.—p. 281.
Carcinoma of Uterus. R. C. Lowman, Kansas City.—p. 286.
Very Early Case of Gonorrheal Arthritis. F. A. Trump, Ottawa.—p. 288.
Doctor and So-Called Cults. C. C. Goddard, Leavenworth.—p. 289.
Law for Doctor. Right of Physician Selling Location and Practice to Resume Practice in Immediate Vicinity. L. Childs.—p. 292.

Medical Record, New York

Oct. 15, 1921, **100**, No. 16

Surgery in Advanced Cancer. W. S. Bainbridge, New York.—p. 663.
Another Case of Ulcerative Colitis Successfully Treated by Colonic Irrigations from Above. M. Einhorn, New York.—p. 668.
Clinical Calorimetry. C. F. Morsman, Spokane, Wash.—p. 670.
Action of Radium on Tumors of Bone. I. Levin, New York.—p. 673.
Rectal Cancer; Operative Methods. H. O. Sommer, Washington, D. C.—p. 675.
Roentgen-Ray Diagnosis of Pathologic Appendix. C. Eastmond, Brooklyn.—p. 677.
Treatment of Football Injuries. H. E. Stewart, New Haven, Conn.—p. 679.
Indican and High Specific Gravity of Urine. J. C. Warbruick, Chicago.—p. 680.

Oct. 22, 1921, **100**, No. 17

Shock and Fatigue with Acute and Chronic (Cytost-Anticytost) Reaction. F. B. Turck, New York.—p. 705.
Surgical Treatment of Selected Cases of Purulent Meningitis. W. Sharpe, New York.—p. 709.
Speech. E. D. Fisher, New York.—p. 713.
*Treatment of Epilepsy. Based on Records of Fifty-Eight Cases. I. S. Wechsler, New York.—p. 714.
Specific Treatment of Dermatitis Venenata (Rhus Toxicodendron). A. Sayer, New York.—p. 717.
Adenoidectomy in Acute Ear Conditions of Children. J. A. Glassburg, New York.—p. 720.
Ulcers of Rectum. A. A. Landsman, New York.—p. 722.

Treatment of Epilepsy.—Whereas there are treatments for epilepsy, Wechsler says there is no real treatment. No drug can be said to be specific if for no other reason than that essential epilepsy is not a disease, but a symptom complex of possibly numerous unknown underlying conditions. So too, it may be observed that any one of the well known methods of treatment, however empiric, may at first help to reduce the number of seizures. Sometimes a drug will act beneficially for a time, then cease to have an effect; the substitution of another drug may then bring about renewed amelioration. Success in treatment frequently results only from persistent effort, and if one drug after another does not help it may be wise to combine several of them to obtain desired results. In some cases at times, gradually increasing doses of the same drug may control the seizures when the smaller doses do not. This is particularly true of luminal, which frequently fails if administered in small quantities and succeeds in larger ones. Finally, there are numerous patients who do not respond to any treatment or combination of treatments even if fortified by rigid dietetic and hygienic regulations.

Missouri State Medical Association Journal, St. Louis

October, 1921, **18**, No. 10

Application of Wassermann Report. G. Dock, St. Louis.—p. 339.
Working Knowledge of Modern Anatomy. M. Pitzman, St. Louis.—p. 341.
Toxemia of Pregnancy. G. C. Mosher, Kansas City, Mo.—p. 346.
Modern Methods of Conducting Labor. A. L. Gray, St. Joseph.—p. 348.

Two Cases of Carcinoma of Bladder in Relatively Young Adults. N. Moore, St. Louis.—p. 352.
Present Conception of Tuberculosis. B. S. Veeder, St. Louis.—p. 356.
Radium Therapy in Diseases of Women. P. F. Cole, Springfield, Mo. —p. 363.

New York Medical Journal

Oct. 5, 1921, **114**, No. 7

Etiology and Treatment of Eclampsia. B. C. Hirst, Philadelphia.—p. 377.
Surgical Endothermy in Malignancy and Precancerous Conditions. G. A. Wyeth, New York.—p. 379.
Treatment of Carcinoma of Cervix and Uterus by Radium Supplemented by Deep Roentgen-Ray Therapy. R. H. Boggs, Pittsburgh.—p. 381.
Prophylaxis in Carcinoma of Cervix. I. Smiley, New York.—p. 384.
Obstetric End Results of Tracheloplastic Operation. M. O. Magid, New York.—p. 387.
Drainage in Pelvic Abdominal Surgery. H. Kelly, Baltimore.—p. 390.
Comparative Value of Whole Ovarian Extract, Corpus Luteum Extract, and Ovarian Residue in Menstrual Disorders. J. C. Hirst, Philadelphia.—p. 391.
Dysmenorrhea. J. V. D. Young, New York.—p. 395.
Two Cases of Acute Inversion of Uterus. W. P. Manton, Detroit.—p. 397.
Present Status of Treatment of Uterine Fibroids. S. Wiener, New York.—p. 400.
Unilateral Twin Tubal Pregnancy. M. Thorek, Chicago.—p. 403.
Review of Recent Obstetric Progress. J. O. Arnold, Philadelphia.—p. 405.
Practical Prenatal Care. P. Oginz, Brooklyn.—p. 408.
Accidents During Delivery. C. M. Stimson, Philadelphia.—p. 410.
Difficulties Encountered in Pregnancy, Labor and Lactation in Working Class Mothers and Those of the Educated Classes. G. Ley, London.—p. 412.
Antenatal Factors of Life and Death: Genetic, Toxigenetic, Gestational and Obstetric. C. W. Saleeby, London.—p. 413.
Dangers and Treatment of Antenatal Syphilitic Environment. J. H. Sequeira.—p. 415.
Congenital Abdominal Ascites with Other Abnormalities. Report of Case. L. Blumenfeld, Brooklyn.—p. 416.

Oct. 19, 1921, **114**, No. 8

*Treatment of Premature Loss of Hair. G. M. MacKee and G. C. Andrews, New York.—p. 437.
Tooth Infection. O. T. Osborne, New Haven, Conn.—p. 442.
Moving Bucky Diaphragm. S. Touscy, New York.—p. 444.
Elimination of Secondary Radiation in Radiography. M. V. Abrams, Brooklyn.—p. 447.
Roentgen-Ray Therapy in Chronic Diseases of Bones, Joints and Tendons. H. B. Philips and H. Finkelstein, New York.—p. 448.
*Operation for Femoral Hernia with a Suprapubic Incision. C. Savini, New York.—p. 451.
Biology of Bone Development in Its Relation to Bone Transplantation. P. W. Nathan, New York.—p. 454.
Rectovaginal Septum in Proctology. D. C. McKenney, Buffalo.—p. 456.
Static Influence of Shortened Pelvic Muscles. J. J. Nutt, New York. —p. 459.
Abdominal Drainage. F. L. Hupp, Wheeling, W. Va.—p. 460.
Immature Cataractous Lens. H. E. Smith, New York.—p. 462.
Simulation of Epidemic Encephalitis by Drug Poisoning. G. Wilson, Philadelphia.—p. 467.
Simple Anorectal Fistula Simulating the Tuberculous Variety. A. A. Landsman, New York.—p. 468.
Local Anesthesia in Dental, Oral, Nose and Throat Surgery. H. E. Tompkins, New York.—p. 469.
Hepatic Fever Due to Gumma of Liver. G. A. Friedman, New York. —p. 475.
Economic Fallacy of Fitting Glasses in Hospitals. A. Brav, Philadelphia.—p. 477.

Treatment of Premature Loss of Hair.—MacKee and Andrews advocate daily brushing of the hair as being in most cases beneficial. If the hair is very dry, brittle, and breaks readily brushing is perhaps harmful. The hair and scalp should be kept clean. The frequency with which these parts should be washed will depend on conditions. As a general rule, a shampoo should be given once weekly. Castile soap will answer most of the requirements. Because seborrhea of the scalp is contagious patients should be instructed to avoid any but their own tonsorial articles and to keep such articles in a sanitary condition. Susceptibility and reinfection may be the cause of many failures in cases of seborrheic alopecia. Certain it is that most patients who have once had seborrheic alopecia will have repeated attacks throughout their lives. Such people should keep an antiseptic and stimulating hair lotion on their dresser and at the slightest evidence of trouble begin to use it. People who have trouble with their hair must take good care of both hair and scalp all their lives. Such prophylactic treatment consists of keeping the scalp and hair clean with castile soap, avoiding reinfection as far as possible, keeping the scalp loose from the skull, avoiding excessive dryness by applying oil, and using an antiseptic lotion once or twice weekly. Physicians should watch for congestion of the scalp. If the congestion is not the effect of treatment, it will usually disappear as a result of treatment. If, however, it is due to overtreatment, all stimulating treatment should be discontained until the congestion disappears. If the scalp is bald there is no use in attempting to restore the hair. In early cases massage, sun bathing, high frequency treatment, and ultraviolet therapy will help to delay the process. The authors furnish prescriptions for twenty preparations which they have found useful in these cases.

Operation for Femoral Hernia.—Savini's operation is a modification of the Ruggi method first described in 1893. He opens the abdomen in the midline above the pubis with a vertical incision. The two recti muscles are separated and the rectus of the side of the hernia is retracted with a strong rertactor. The peritoneum is separated from the abdominal walls and the femoral ring is exposed. The sac is separated from the femoral ring with blunt dissection and is pulled out intact from the femoral canal with the aid of a small spongeholder. The sac has now the appearance of a diverticulum of the peritoneum and can be easily opened and when empty of its contents can be ligated and excised at the level of the peritoneum. Two or three stitches will now bring the Poupart ligament nearer to the Cooper ligament to reduce the diameters of the orifice. In this modification the operation is practically identical with the operation of Ruggi, the only difference being that the inguinal canal is not opened.

Rhode Island Medical Journal, Providence

October, 1921, **4**, No. 10

State Hospital for Mental Diseases. A. H. Harrington, Howard.—p. 127.
Psychoses Following Head Injury. A. H. Harrington.—p. 129.
Whom Should We Commit? G. B. Coon, Howard.—p. 131.
Case of Torsion of Omentum and Double Femoral Hernia. C. O. Cooke, Providence.—p. 135.

Southern Medical Journal, Birmingham, Ala.

September, 1921, **14**, No. 9

Diagnostic Study of One Thousand Cases Seen in Southeast. S. R. Roberts, R. N. Holland and L. B. Robinson, Atlanta, Ga.—p. 665.
Fractional Analysis of Gastric Contents. J. Friedenwald and Z. R. Morgan, Baltimore.—p. 671.
Pellagra. J. L. Jelks, Memphis.—p. 678.
Proposed Standard Treatment for Early Syphilis. G. Walker, Baltimore.—p. 683.
Rational Method of Producing Antihuman Amboceptor in Rabbits. G. F. Klugh, Atlanta, Ga.—p. 684.
Malnutrition in Children of Well-to-Do. C. G. Kerley, E. J. Lorenze, Jr., and R. H. DuBose, New York.—p. 685.
Endocrine System in Infancy and Early Childhood. O. W. Hill, Knoxville, Tenn.—p. 689.
Roentgen-Ray and Radium as an Aid to Surgery in Deep Seated Malignancies. W. O. Floyd, Nashville.—p. 697.
Radium Therapy in Fibroid and Other Benign Conditions of Uterus. W. Kohlmann and E. C. Samuel, New Orleans.—p. 703.
Extension Treatment of Fractures. T. H. Ingram, Memphis.—p. 710.
Factors That Lower Mortality Rate of Suprapubic Prostatectomy. G. R. Livermore, Memphis.—p. 713.
Combined Examination of Urinary Tract by Urologist and Roentgenologist. H. E. Ashbury and A. E. Goldstein, Boltimore.—p. 719.
Nausea and Vomiting of Pregnancy. J. R. Garber, Birmingham.—p. 726.
Eliminative Subjective Testing for Glasses. C. A. Bahn, New Orleans. —p. 732.
Antrum Operation with Demonstration of New Instruments. E. L. Roberts, Nashville.—p. 742.

Surgery, Gynecology and Obstetrics, Chicago

October, 1921, **33**, No. 4

*Radical Abdominal Hysterectomy for Cancer of Cervix Uteri. H. Okabayaski, Kyoto, Japan.—p. 335.
*Tendon Transplant for Intrinsic Hand Muscle Paralysis. K. W. Ney, New York.—p. 342.
*Indications for Surgical Treatment in Different Types of Goiter. W. E. Sistrunk, Rochester, Minn.—p. 348.
Relaxation of Vaginal Outlet. L. E. Burch, Nashville, Tenn.—p. 353.
*Clinical and Experimental Observations in Use of Saline Irrigation in Treatment of Diffuse Peritonitis. A. M. Willis, Richmond, Va.—p. 355.
*Papillary Cystadenoma of Ovary. J. F. Erdmann and H. V. Spaulding, New York.—p. 362.
*Splenectomy in Third Stage, Banti's Disease. H. B. Sweetser, Minneapolis.—p. 376.
Results of Alkalization of Operative Cases. E. Cary, Chicago.—p. 381.
*Embolism and Thrombosis of Superior Mesenteric Artery. E. Klein, New York.—p. 385.
Is Surgeon of Experience Ever Justified in Violating Recognized Surgical Technic in Dealing with Malignant Neoplasms? L. L. McArthur, Chicago.—p. 406.

*Report of Cases Treated with Radium in Gynecologic Service at St. Luke's Hospital. H. O. Jones, Chicago.—p. 409.
Esophageal Stricture Following Vomiting of Pregnancy; Six Cases. P. P. Vinson, Rochester, Minn.—p. 412.
*Complement Fixation in Diagnosis of Gonorrhea in Women. W. W. Lailey and H. C. Cruikshank, Toronto.—p. 414.
*New and Advanced Surgical Treatment for Breast Cancer: The Cautery Knife. J. F. Percy, San Diego, Calif.—p. 417.
Section of Sensory Root of Fifth Cranial Nerve Under Local Anesthesia. W. T. Coughlin, St. Louis.—p. 424.
Final Report on Case of Radical Operation for Cure of Double Obturator Hernia; Failure. C. Van Zwalenburg, Riverside, Calif.—p. 429.
Improved Rubber Covered Rectal Tampon. J. R. Pennington, Chicago. —p. 430.
Knife for Cervical Caesarean Section. J. B. DeLee, Chicago.—p. 431.

Radical Abdominal Hysterectomy for Cervix Cancer.—Okabayaski has modified Takayama's operation so that in his opinion any case of cancer of the uterus, whether in a very advanced stage or in a primary stage, is operable. The method is said to render extirpation easy and bloodless, even though the parametrium is extensively infiltrated with cancer and though one excises the tissue near the pelvic floor.

Tendon Transplantation for Hand Paralysis.—In the operation described by Ney the short extensor tendon of the thumb is passed through a tunnel under the anterior annular ligament and transplanted into the tendon of the palmaris longus, or that muscle being absent (about 20 per cent. of cases) into the flexor carpi radialis.

Surgical Treatment of Goiter.—Sistrunk states that colloid goiters occurring in young persons, are not surgical, and respond to treatment with iodin and thyroxin. Adenomatous goiters usually appear in young persons. Twenty-three per cent. of the patients with adenomatous goiters seen in the Mayo Clinic show symptoms of hyperthyroidism, but these symptoms do not develop until the goiter has been present for an average of about sixteen years. In young persons, unless the goiters attain considerable size or produce symptoms of pressure, they are not considered surgical. In the majority of instances after patients with adenomatous goiter have attained the age of 25 or 30, surgery is advocated. All adenomatous goiters associated with hyperthyroidism are considered surgical if the condition of the patient will permit an operation. Exophthalmic goiter is best treated surgically, and the best results are obtained in patients operated on early in the course of the disease before marked damage has been done to the vital organs. Many patients require one or two ligations of the superior thyroid vessels preliminary to thyroidectomy in order to make thyroidectomy a safer procedure. If care is exercised in selecting the type of operation which should be performed in a given case, the mortality following operations is low.

Irrigation Treatment of Peritonitis.—Clinical experience and animal experimentation indicate to Willis strongly that saline irrigations are of value in the treatment of progressive diffuse peritonitis, and he is convinced that it has enabled him to save patients who would otherwise have succumbed. In fourteen cases gastric lavage, opiates, and the free use of salt solution by rectum and subcutaneously were used. Seven patients succumbed. Of nineteen patients, eighteen were treated by free incision, the opening of all pockets, and combined irrigation with physiologic sodium chlorid solution and a water or electric suction apparatus was used. The technic did not cause unnecessary trauma to the peritoneum, and with the use of the suction apparatus, it was little more time consuming than the operation where irrigation was omitted. Of the nineteen patients seen, three died.

Cystic Disease of Ovary.—In a review of 5,000 consecutive pathologic sections cystic disease of the ovary constituted 200, or 4 per cent., and of the 200, thirty-six, or 18 per cent., were papillary. Erdmann and Spaulding believe that the most probable development is from a cellular perversion of the germinal epithelium. There is a strong tendency to bilateralism (22.2 per cent.) and local metastasis. General metastasis is not rare. Microscopically 66.6 per cent. of papillary cystadenomas were cancerous or precancerous.

Splenectomy in Banti's Disease.—Sweetser analyzes forty-two cases recorded in the literature and reports a case of his own in which fifteen months after removal of the spleen the patient, a man, aged 37, was apparently in perfect health. A relative lymphocytosis has recurred, and the normal relationship of neutrophils to lymphocytes is even more markedly disturbed than prior to the splenectomy; in other words, that the blood findings, as concerns the leukocytes, have reverted to the infantile type. A plea is made for detailed histories of all cases of this type, subjected to splenectomy, and also for subsequent reports of progress at sufficiently late date after operation to determine the ultimate result as regards permanency of cure.

Occlusion of Superior Mesenteric Vessels.—A clinical picture of an acute intestinal obstruction lasting many hours, with bloody vomitus, and after that profuse and watery bowel movements also containing blood Klein says suggests the diagnosis of occlusion of the superior mesenteric artery or vein. The violent colic, the distention, the presence of a palpable coil, and the absence of temperature, all tend to confirm that view. He reviews the literature and adds one case.

Radium in Gynecologic Cases.—Jones reports on more than 500 cases in which radium was used: fibroids, 120 cases; hemorrhage, 129 cases; carcinoma, 100 cases; leukorrhea, 60 cases; miscellaneous, 100 cases. These cases run the pathologic gamut from superficial skin lesions to inoperable carcinoma of the bowel, including various benign and malignant tumors.

Gonorrhea Complement Fixation Test in Women.—The results from 217 serums from women tested by the method described by Lailey and Cruikshank gave 116 positive reactions and ninety-six negative reactions. In the cases with positive reactions smears were positive for gonococcus in 92 and smears were negative in 12. Of six with doubtful gonococcus smears all had profuse vaginal discharges. Of the twelve showing negative smears, seven had pelvic inflammatory masses and the husband of one had chronic gonorrhea. The cases with negative reactions covered all stages of infection from fresh infections to chronic conditions of years' duration.

Cautery Knife in Breast Cancer Operation.—The condition of the inoperable case of cancer is so desperate that its consideration from the standpoint of treatment places it outside the realm where ordinary surgical judgment can rule or guide. It is in this class of cases that Percy uses the cautery knife. The unheated knife does not devitalize any of the malignancy it does not remove. The hot knife does. The cold knife does not spoil the soil for the further development of cancer. The hot knife does. The knife unfortified with heat, if it touches cancer, vaccinates it into new area. The hot knife does not. The cold knife stimulates the growth of the unremoved cancer cells. With the hot knife this is impossible. The actual technic of the use of the hot knife in cancer has for its main purpose the wide removal of the proximate lymphatics with their load of malignant cells, and the destruction of the distant ones by the dissemination of the heat as far as it is possible to make it go through the apparently uninvolved tissue. This method of dissection with the hot knife is described fully.

Virginia Medical Monthly, Richmond

October, 1921, **48**, No. 7

*Rupture of Heart. J. S. Davis, University.—p. 361.
Present Status of Intravenous Therapy. A. F. Robertson, Jr., Staunton. —p. 364.
Measuring Intelligence. E. P. Tompkins, Roanoke.—p. 367.
Etiology, Pathology and Diagnosis of Surgical Diseases Under Symposium of "Diseases of Kidneys, Ureters and Bladder." L. T. Price, Richmond.—p. 371.
Cases of Chronic Nephrosis as Classified by Epstein. C. E. Conrad, Harrisonburg.—p. 375.
Nasal (Sphenopalatine Meckel's) Ganglion Neurosis and Hyperplastic Sphenoiditis. H. R. Etheridge, Norfolk.—p. 377.
Results of Operation on Eleven Hundred Women for Disease of Pelvic Organs and Outlet. C. P. LaRoque, Richmond.—p. 384.
*Drug Therapy in Epilepsy. V. R. Small, Raleigh, N. C.—p. 386.
Constipation. G. P. Hamner, Lynchburg.—p. 390.
Perforating Ulcer of Lesser Curvature, Obstructing Ulcer at Pylorus, Hydrops of Gallbladder. Report of Case. J. R. Verbrycke, Washington, D. C.—p. 392.
Acute Osteomyelitis. J. W. Gibbon, Charlotte, N. C.—p. 394.
Acute Mastoiditis. J. E. Diehl, Norfolk.—p. 399.
Hysterical Amblyopia. Report of Case. C. Edmond, Clifton Forge.—p. 401.
Importance of Early Recognition and Treatment of Prostatic Hypertrophy. W. C. Stirling, Jr., Winston-Salem, N. C.—p. 402.
Foreign Body in Postnasal Space. Report of Case. E. R. Miller, Harrisonburg.—p. 404.

Use of Glucose Intravenously in Certain Postoperative Conditions. A. De T. Valk, Winston-Salem, N. C.—p. 405.
Conservative Treatment of Eclampsia. J. A. Lipnick, Norfolk.—p. 407.
Lest We Forget: Memorial to the Late Joseph Price. J. W. Kennedy, Philadelphia.—p. 409.
Gunshot Wound. R. H. Pretlow, Suffolk.—p. 413.

Rupture of Heart.—The striking features of Davis' case are the advanced age (66), male sex, moderate blood pressure and digestive symptoms with scarcely any cardiac difficulty, and no apparently adequate exciting cause for the fatality. On the posterior aspect of the heart, a longitudinal rupture from one-half to three-fourths of an inch long was found in the left ventricle very close to the septum and about the middle third of the posterior aspect. Examination from the inside revealed in the corresponding place a defect in the endocardium, which was probably one inch by half an inch in dimensions. Under this there was an opening in the myocardium through which the dull end of the dissecting forceps passed quite readily, though the orifice became distinctly smaller as the epicardium was approached. There were no blood clots or thrombi connected with it, and it had evidently not originated beneath a mural thrombus. The wall looked healthy and did not feel particularly soft to the finger or forceps. This was the only area of the kind, and there were no evidences of gumma, tubercle, or tumor formation anywhere.

Luminal in Epilepsy.—In Small's series of fifty cases, 80 per cent. responded well to luminal treatment.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Oct. 8, 1921, **2**, No. 3171

*Some Common, but Often Unrecognized, Obstetrical Difficulties. W. B. Bell.—p. 545.
*Experimental Rickets in Rats. V. Korenchevsky.—p. 547.
Site of Operation for Empyema. D. C. L. Fitzwilliams.—p. 550.
Intravenous Injection of Antimony Tartrate in Japanese Bilharzia Disease. J. B. Christopherson.—p. 551.
*Association of Skin Tuberculosis with Visceral and Other Tuberculous Manifestations. G. H. Lancashire.—p. 551.
Cutaneous Sensitization and Focal Sepsis in Etiology of Certain Skin Affections. H. W. Barber.—p. 554.
Cutaneous Sensitization. R. C. Low.—p. 559.
Skin Diseases in Pensioners. H. MacCormac.—p. 561.
Treatment of Narcomania. S. Park.—p. 563.
Case of Fibrosis of Lung. T. M. Allison.—p. 563.
*Self-Inflicted Rupture of Small Intestine Caused by Reduction of Nonstrangulated Inguinal Hernia. P. J. Moir.—p. 563.

Cause of Uterine Inertia.—Bell discusses occipitoposterior presentations; postmaturity; certain pelvic deformities—nonrachitic flat pelvis; generally contracted pelvis; funnel-shaped pelvis—and that form of primary uterine inertia in which the normal pressor substances that stimulate uterine contractions in parturition are insufficient. He claims that it is possible to discover this condition before the onset of labor, and without difficulty to prevent it. During the last two or three weeks of gestation, the uterus is very sensitive and the muscle contracts readily on simple stimulation, such as that produced by gentle kneading with the hand. If the uterus remains flaccid and tends to sag at the sides without proper central protuberance, there is every likelihood that, unless the condition be remedied, labor will be inert. Confirmation of the conditions of primary inertia may be obtained by an estimation of the systolic blood pressure, which should be higher than normal during the last weeks of pregnancy. Usually the pressure at this time is equal to that of 140 mm. Hg. If the blood pressure be found to register 110 mm. Hg or less, there is almost certainly some insufficiency of pressor substances. Normally, the amount of the ionized calcium in the blood tends to rise at the end of pregnancy, owing to the lessened demands of the fetus, and these salts greatly influence the tone of involuntary muscle fibers. It is necessary, therefore, in the cases to supply calcium in an absorbable form. Bell used a preparation known as mistura calcii lactatis recentis—pure concentrated lactic acid (200 grains), precipitated calcium carbonate (75 grains), and chloroform water 8 ounces. About 2 ounces of the mixture should be given every night.

Experimental Rickets.—The results obtained by Korenchevsky agree, in general, with the results of the experiments of Mellanby, McCollum, Simmonds, Parsons, Shipley and Park.

Association of Skin and Visceral Tuberculosis.—Lancashire refers to a series of lupus cases taken in the order of their notification about 1913 showing by 1921 visceral tuberculous disease in 11 per cent., with a fatal issue in about 4 or 5 per cent. Of fifty patients with lupus vulgaris examined for signs of visceral tuberculosis, one had active phthisis. In this case the lupus had succeeded the lung disease. Two cases had the appearance of chronic phthisis, but cough was the only definite symptom, and there were no other signs of activity. No tubercle bacilli were found in the sputum. Two cases presented evidence of old and apparently arrested phthisis. In the remaining forty-five cases there were no physical signs distinctive of recent or old phthisis. Twenty-four of these were beyond suspicion, but in the remaining twenty-one, the physical condition, build, and poor percussion resonance over the apices, allowed suspicion of tuberculous predisposition. Lancashire says that whereas the causal relationship of primary visceral with secondary cutaneous tuberculosis is already established, the contrary causal relationship is not yet definitely proved. Probably infection of the viscera from the skin does occasionally occur, but the majority of cases of cutaneous tuberculosis in this respect remain "good lives."

Self-Inflicted Rupture of Intestine.—Moir's patient sustained a rupture of the small intestine when he attempted to reduce an inguinal hernia by using considerable force.

Japan Medical World, Tokyo

Sept. 15, 1921, **1**, No. 5

Studies on Vasomotor Nerves of Lung of Toads. T. Mashima.—p. 1.
Blood Changes Following Injection of Splenic Fluid and Influence of Spleen on Blood Coagulation. H. Obara.—p. 5.
Aggressive Action of Filtrates of Bacterial Cultural Mediums. I. Otsubo.—p. 7.
Catalytic Action of Components of Hemolytic Complement. I. Uyeno.—p. 11.

Lancet, London

Oct. 8, 1921, **2**, No. 5119

*Respiratory Efficiency in Relation to Health and Disease. M. Flack—p. 741.
Mucocele and Pyocele of Nasal Accessory Sinuses. W. G. Howarth.—p. 744.
*Nutrition. H. M. R. Gribbon and D. N. Paton.—p. 747.
*Prognosis in Patients Presenting Rapid Heart Action. J. Hay.—p. 750.
Vitamin: Content of Oils. S. S. Zilva and J. C. Drummond.—p. 753.
*Case of Gangrene Following Measles. E. Thorpe.—p. 754.
Case of Multiple Sarcoma. J. A. C. Macewan.—p. 754.
*Case of Intraperitoneal Rupture of Bladder. D. Chattaway.—p. 754.
Combined Extradural and Intradural Hemorrhage; Recovery. M. L. Treston.—p. 755.
*Two Unusual Gynecologic Cases. J. C. H. Leicester.—p. 755.

Exercises for Establishing Respiratory Efficiency.—A system of ten exercises has been elaborated by Flack which take about ten minutes daily to perform and incorporating so far as possible, natural movements. They will be found useful in preserving the physical efficiency of those engaged in sedentary occupations and will enable them to indulge in open air exercise without undue fatigue. They are in no way designed to supplant recreational exercise nor to replace more elaborate systems of physical training.

Nutrition of Viennese Children.—The general conclusion reached by Gribbon and Paton is that a state of undernutrition affecting the growth of the children has existed in Vienna and the adjoining country. No evidence is afforded that this has been associated with any marked increase in the incidence of rickets. Life and a certain amount of activity have been sustained on a gross energy intake of little over 2,000 calories per man per day, which must be explained in the light of Benedict's finding that undernutriiton markedly decreases the basal metabolism.

Prognosis in Rapid Heart Action.—Rapid heart action Hay says may be a symptom and nothing more; the manner of systole is normal, the rhythm is physiologic. The element of danger is not in the rapid action but in the reason for its presence. The prognosis will depend on an accurate understanding of the primary cause and the possibility or other-

wise of remedying it. In a second group the rapid action is fundamentally different. It originates in the heart itself. It is a disease rather than a symptom. The actual contraction of the heart is abnormal and less efficient. In some patients the auricles and ventricles contract simultaneously, and in the majority the auricles have ceased to take any share in the circulation. The presence of tachycardia and irregularity is evidence of the existence of a pathologic rhythm. The immediate danger to the patient results from the exhausting effect of the rapid and relatively inefficient action of the heart. The faster the rate, the greater the danger. The prognosis improves as treatment is effectual in slowing the heart. Rate for rate the prognosis is graver if the action is irregular. Irregularity results in inadequate filling of the heart during diastole. In every case the immediate prognosis depends on the manner in which the heart has responded to the extra strain entailed by the sudden change in the rhythm. The accuracy of the more remote prognosis will depend on an acquaintance with the usual course, followed by the various forms of rapid action under differing conditions.

Gangrene Following Measles.—Thorp cites the case of a child, aged 4½ years, suffering from measles which on the eleventh day of the disease developed gangrene of the toes of the left foot and rapidly spread up the leg to the rgeion of the knee joint, a well marked line of demarcation forming at the level of the junction of the upper and middle thirds of the tibia; at the latter part of this period of twenty-four hours a patch of dry gangrene was observed on the great toe of the right foot. The condition of the child was such that it was thought advisable to operate and it died on the fifteenth day of the disease.

Intraperitoneal Rupture of Bladder.—The interesting features of Chattaway's case are its great rarity and the fact that a patient was able to make an uninterrupted recovery after having a large amount of foul urine in the peritoneal cavity for thirty hours. The diagnosis was obvious and the treatment easy, although when first seen the patient appeared moribund. However, an operation was her only chance, and she made a remarkable recovery.

Carcinoma of Cervix: Ruptured Tubal Pregnancy.—Leicester reports a case of columnar carcinoma occurring in the cervix left after a subtotal hysterectomy and a case of rupture of a tubal gestation in the third week of pregnancy.

Oct. 15, 1921, **2**, No. 5120

Crime and Mental Deficiency. W. C. Sullivan.—p. 787.
*Hair-Balls or Hair-Casts of Stomach and Gastro-Intestinal Tract. I. J. Davies.—p. 791.
*Treatment of Syphilis by Intravenous Injections of Mercury. J. E. Lane.—p. 796.
*Four Genito-Urinary Cases. J. W. G. Grant.—p. 797.
*Cultivation of Spirochetes. F. W. Twort.—p. 798.
Accuracy of Formalin and Sachs-Georgi Tests for Syphilis. W. N. Kingsbury.—p. 799.
Case of Dermatitis Herpetiformis. A. R. Fraser.—p. 801.
Intramine Treatment for Chronic Cervicitis and Endometritis. G. W. Rundle.—p. 802.

Hair Ball in Stomach.—Two cases of hair-cast of the stomach are reported by Davies and 108 cases from the literature are abstracted.

Mercuric Cyanid Intravenously in Syphilis.—Lane endorses the value of intravenous injections of cyanid of mercury, given concurrently with one of the arsphenamin substitutes, and for the prophylaxis of syphilis considers it to be infinitely superior to any other routine of treatment. The routine adopted is one injection of one of the arsphenamin substitutes and five injections of the cyanid solution per week; the doses of the latter varied with the tolerance of the patient, and it was found that many patients could stand a dosage of from 40 to 50 minims, so that they received from 200 to 250 minims in the course of a week. The maximum number of cyanid injections given was 110, in a case of very severe and disfiguring framboesiform syphilid of the nose and face; in sixteen cases more than fifty injections were given, and in thirteen cases, forty or more injections were given; the average number given came out a little under forty; the total number amounted to considerably over 5,000. The strictest attention was paid to the hygiene of the mouth, and the occurrence of severe gingivitis or other manifestations of mercurialism was rare, so that under appropriate treatment the injections had seldom to be interrupted for more than a few days; in two cases phlebitis and occlusion of the veins occurred, and necessitated the recourse to other forms of mercurial treatment.

Tuberculous Kidney; Ureter Stone.—The cases reported by Grant are: tuberculous kidney with blocked ureter; stone in ureter simulating acute appendicitis; pain after gastrojejunostomy: renal stone, and accessory renal artery with intermittent hydronephrosis.

Cultivation of Spirochetes.—The "essential substance" used by Twort for the cultivation of bacteria difficult to cultivate, especially spirochetes is stored up in the bodies of allied bacteria such as the tubercle bacilli and *Bacillus phlei*. The growth of *B. phlei* is collected, killed by steaming, and dried. One gram of the dried bacillus is ground up with 12 c.c. glycerin and 22 c.c. of physiologic sodium chlorid solution. The emulsion so obtained is autoclaved, and when cool is added to 66 c.c. of mixed yolk and white of new laid eggs. The medium was then placed into tubes, sterilized at 61 C. on three successive days, and inspissated in slopes.

Annales de Médecine, Paris

August, 1921, **10**, No. 2

*Glandular Dystrophia. V. Hutinel and M. Maillet.—p. 89.
The Undifferentiated Blood Cell of Acute Leukemia. N. Fiessinger and J. Brousselle.—p. 115.
*Old Syphilitic Myocarditis. E. Lenoble.—p. 125.
*The Pneumococcus and Pneumococcus Infections. J. Paraf.—p. 144.

Dystrophia of Endocrine Glands.—Hutinel and Maillet comment on the new orientation impressed on medicine in late years by the conception of internal secretions, and especially by monosymptomatic dystrophia of the various endocrine glands. They review in detail the whole field, emphasizing the influence of deranged endocrine functioning on skin, skeleton, and circulation. The digestive apparatus seems to feel the influence less than others. In girls, the thyroid and ovary and in boys, the pituitary and testicles are responsible for certain symptoms, usually associated with their dystrophia. Certain endocrine insufficiencies are evidently responsible for certain features of the so-called diatheses, but the food, the mode of life, muscular exercise, etc., evidently cooperate so we must not ascribe too much importance to the endocrine system in the arthritic and lymphatic diatheses, for example.

Old Syphilitic Myocarditis.—Lenoble refers to myocarditis which he calls déshabitées, that is, the spirochetes have long moved out. He gives details of ten cases; the aorta is usually involved at the same time as the myocardium. These cases are distinguished by the sudden and brutal onset of the heart disturbances; the fleeting and transient periods of improvement and the exacerbations. The latter may be preceded by violent pain in the precordial region, resembling that of angina pectoris, and sudden death is relatively frequent. The spirochetes seem to linger in the myocardium only a short time, and probably cannot be found in it except for a brief period at first, but the lesions entailed are irreparable. It is still a question whether the lesions found at necropsy are the work of the spirochetes or of their toxins.

Pneumococcus Infection.—Paraf draws up the balance sheet of pneumococcus infection and its treatment, presenting evidence to establish anew the share of healthy carriers in contagion. Fomites and the air are also liable to transmit the infection. His experience testifies to the advantage of preventive vaccination when there is danger of the spread of pneumococcus infections in institutions. He advises three injections at seven days interval. In treatment, the subcutaneous injection of the antiserum in influenzal bronchopneumonia gave very inconstant results in France. The results were much better when given by the vein. The experiences in America are compared with those in other countries. Intravenous plus intrapulmonary injection of the antiserum in some desperate cases of influenzal pneumonia resulted in some cures beyond all anticipations.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 29, 1921, **45**, No. 27. Only first half reviewed.

*Schick Reaction in Measles. Lereboullet, Marie and Brizard.—p. 1210.
*Mediastinal Lymphocytoma. Babonneix, Denoyelle and Poliet.—p. 1212.

*Syphilitic Cranial Osteitis. P. Merklen and L. Desclaux.—p. 1216.
*Syphilitic Origin of Deforming Rheumatism. H. Dufour and A. Ravina. —p. 1219.
*Sodium Thiosulphate in Therapeutics. R. Mathieu.—p. 1223.
*Familial Pleonosteosis. A. Léri.—p. 1228.
*Tertiary Syphilitic Fever. Edhem (Saloniki).—p. 1231.
*Autovaccine Therapy in Typhoid. D'Oelsnitz.—p. 1234.
*Sensitization to Antipyrin. M. Labbé and J. Haguenau.—p. 1237.
*Sacralization of Lumbar Vertebra. A. Léri.—p. 1241.
*Action of Potassium Chlorid in Renal Dropsy. L. Blum, E. Aubel and R. Hausknecht.—p. 1244.
*Horse Asthma. P. Vallery-Radot and J. Haguenau.—p. 1251.
Stenosis of Duodenal Bulb. F. Ramond, Vincent and Clément.—p. 1260.

The Schick Reaction in Measles.—The proportion giving a positive reaction among 110 children with measles was about 60 per cent. of those from 6 months to 5 years old, and 40 per cent. of those older than this. The proportions were thus the same as in children free from measles. The conclusion seems evident that measles does not affect the reaction. The latter thus seems to be totally different from other biologic reactions.

Lymphocytoma in Mediastinum.—The diagnosis had been first acute pericarditis with effusion in the boy of 12; tuberculous symphysis then became more probable. The liver was pushed down, but it seemed merely to be abnormally large, and the testicle seemed to be the seat of a tuberculous process when in reality there was a metastatic tumor in it. The hemorrhagic pleurisy and the cyanosis of the face might have warned of a mediastinal tumor, with the precordial bulging. Necropsy disclosed a large lymphocytoma filling the mediastinum, with metastasis in kidneys and testicle.

Syphilitic Osteitis of Skull.—The rectangular ulceration in the left parietal bone was followed by the casting off of a sequester 6 by 10 cm., showing the sound dura beneath, toward the close of a course of arsenical treatment. The patient was a female convict.

Syphilitic Origin of Deforming Rheumatism.—Dufour has previously reported nine cases of chronic arthritis deformans in syphilitics, and here reports another case. The syphilis is of a latent, torpid type, like that of syphilis inherited or acquired at conception. Treatment usually comes too late, but even then surprising benefit may sometimes be realized. In this latest case the man of 23 had attacks of pains in the joints, with fever, confining him to bed for ten months. Then his fingers became stiff and deformed, and the arms and shoulder are atrophied, with some atrophy of the legs now, five years after the first symptoms. In the discussion that followed, Merklen related some additional typical cases of the kind.

Treatment of Circumscribed Edema and Chorea.—Mathieu reports encouraging success in a case of circumscribed edema in a woman of 37 and in three cases of chronic chorea under treatment with 4 gm. or 2 gm. of sodium thiosulphate taken, fractioned, in a capsule in the middle of the meals. No benefit was noted in some epileptics. In all the cases all previous measures had failed, including peptone and anti-anaphylaxis.

Familial Disease of Ossification.—Léri relates that a man of 35, his daughter of 4, and a recently born son all present a special malformation of the hands, the second phalanges of all the fingers bent at a right angle, stiff, and abnormally large.

Syphilitic Fever in Tabes.—In the case reported by Edhem in a man of 65, attacks of high fever, gastralgia and vomiting returned once to three times a year for ten years, lasting each time for four or six weeks. The attacks had been ascribed to acute dyspepsia, although the man was known to be syphilitic, and symptoms of tabes had developed. Recently the suggestion that the febrile attacks might be a manifestation of syphilis led to specific treatment as a severe attack developed abruptly, and this cured it at once. The liver seemed to be normal in this man.

Vaccine Therapy of Typhoid.—D'Oelsnitz reports experiments with autogenous vaccines made exclusively from the stools.

Sensitization and Desensitization to Antipyrin.—This same article appeared elsewhere and was reviewed as follows in THE JOURNAL on page 1451, October 29, but was translated wrong. We reproduce it corrected as follows:

Labbé and Haguenau here report another case of sensitization to antipyrin which they conquered by desensitization methods. Widal and Vallery-Radot's report of their first case of the kind was summarized in these columns, April 10, 1920, p. 1055. The anaphylaxis to this drug had been noted for nine years in their case. In the case here reported by Labbé and Haguenau the drug had been taken only two or three times, and the anaphylaxis seems to be a kind of crossed sensitization, possibly from articles of food. They have encountered a case of this latter kind, anaphylaxis to strawberries having developed in consequence, apparently, of an injection of diphtheria antitoxin. Severe anaphylaxis phenomena followed the eating of strawberries afterward. The young woman was desensitized to antipyrin by the usual method of repeated small doses, but this desensitization did not last very long, the anaphylaxis developing anew although she had not taken any of the drug in the interim. The anti-anaphylaxis method, on the other hand, proved invariably successful, that is, giving a small dose of the drug one hour before the full dose. The colloidoclasic nature of the phenomena observed was confirmed by the leukocyte count at intervals. One remarkable fact brought out by their research is that the most intense upset in the leukocytes occurs almost instantaneously, and hence it escapes detection unless the blood count is made at once and repeatedly. This instantaneous reaction seems to be peculiar to this drug, probably on account of its rapid diffusion; it is sometimes refound in the urine in two minutes.

Sacralization of Vertebra.—Léri remarks that sacralization is the fashion; there is scarcely any obscure sciatica nowadays for which some roentgenologist does not suggest the broadening out of the fifth lumbar vertebra as a possible cause. In fifty-three of 100 roentgenograms of the region, the shadow of this vertebra impinged more or less on the ilium or sacrum or both, and in only twenty-three were the outlines in accordance with the accepted norm. However, there was no evidence that this sacralization could be responsible for the pains in more than 6 or 7 per cent. There do not seem to be any symptoms pathognomonic of this, and the diagnosis can be only by exclusion.

Action of Potassium Chlorid in Nephritic Edema.—Blum and his co-workers report research on the action and elimination of sodium chlorid and potassium chlorid in nephritis with a tendency to dropsy. Among the practical points thus brought out is that the potassium displaces the sodium in the tissues. As the retention of sodium chlorid is what entails the dropsy, by displacing the sodium with potassium, the water is released and can be voided. This is the explanation of the diuretic action of potassium chlorid, which has been neglected hitherto because we did not know how to use this drug.

Treatment of Horse Asthma.—Asthma of nineteen years' standing has been cured in the case described by a few weeks of repeated application of the sensitizing substance, horse hairs, laid on a small scarified area (Walker). This adds another method to the numerous ones already in use for conquering anaphylactic conditions—methods which fail sometimes, and sometimes are surprisingly successful.

Médecine, Paris

September, 1921, **2**, No. 12

*Progress in General Biology in 1921. J. Gautrelet.—p. 901.
The Second Wind. J. P. Langlois.—p. 915.
*Internal Secretion of the Nuclei. Doyon.—p. 918.
*The Balance Between the Bases and Acids of the Organism. L. S. Henderson (Harvard).—p. 923.
*The Nature of Spirochetes. F. Mesnil.—p. 930.
*The Thresholds in Kidney Secretion. L. Ambard.—p. 936.
*Rôle of Liver in Nutrition. P. Brodin.—p. 945.
*Physiopathology of Cerebrospinal Fluid. W. Mestrezat.—p. 948.
*The Leukocyte. P. Mauriac.—p. 954.
Therapeutic Application of Dyes. H. Agulhon.—p. 959.
*Study of Movements. L. Binet.—p. 964.
*Quantitative Test for Amino-Acids in Urine. W. Mestrezat.—p. 970.

Recent Progress in Biology.—Gautrelet declares that the last year has demonstrated that traumatic shock, anaphylactic shock, peptone shock and protein shock are all one and the same, namely, an upset in the colloidal balance of the body fluids. This entails flocculation and hence liability to mechanical obstruction of the capillaries. This colloidoclasia, of

which the hemoclasic crisis is the criterion, may be induced by drugs, by food, by simple chilling (as in paroxysmal hemoglobinuria), by absorption of the products from traumatized tissues, etc. The clinical manifestation of the colloidoclasis may assume the form of urticaria, asthma, migraine, etc. To ward off the colloidoclasis Brodin injects sodium chlorid; Kopaczewski, sodium bicarbonate and sodium oleate; Sicard and Paraf, sodium carbonate; C. Richet, Jr., injects peptone; Lumière, sodium thiosulphate. Gautrelet reviews the numerous results of the recent incessant research on protein therapy, anaphylaxis, lipoids, ferments, vitamins, glycemia, and the endocrine secretions, mentioning in particular Bierry and Rathery's findings in the liver in regard to what they call the "liberation of sugar from the proteins in the plasma." They have demonstrated this by comparison of the plasma entering and leaving the liver, and say that this "proteidic sugar" represents a hitherto undescribed function of the liver.

Regulation of the Fluidity of the Blood.—Doyon explains that the antithrombin produced by the nuclei of organs is one of the factors which keep the blood fluid.

The Balance Between the Bases and Acids of the Organism.—Henderson expatiates on the remarkable constancy of this balance from the very first, and he explains the various factors responsible for the constancy of the hydrogen ions in the blood.

Nature of Spirochetes.—Mesnil presents evidence that the spirochetes are more closely akin to bacteria than to protozoa. Nothing but their flexibility, he says, distinguishes them from bacteria, and intermediate forms have been described.

The Thresholds in Kidney Secretion.—Ambard protests that the idea of the threshold is not paid due attention, and that those who do heed it are obsessed by the erroneous notion of the fixity of the threshold. In reality the threshold varies, so that the tolerance for carbohydrates in diabetes, for example, is explained to some extent at least by the play of the threshold. Increased tolerance is generally ascribed to an improvement in the basal disturbance in the metabolism of carbohydrates, when in fact it is merely the result of a rising threshold. His research has demonstrated the extreme slowness of these variations of the threshold in some conditions, while in others they proceed rapidly. The Ambard index and the concentration of the urine may be normal in diabetes insipidus, the whole trouble being an abnormally low threshold for water. He recalls that if a normal person drinks 6 or 7 liters of water for several days in succession, and then stops and takes merely the ordinary amount, he will suffer from thirst and present all the other symptoms of diabetes insipidus for a time, the threshold for water having been thus artificially reduced temporarily.

Recent Data on the Rôle of the Liver in Nutrition.—Brodin summarizes recent research which has magnified the capital rôle of the liver in digestion. Before the food that has passed through the first phase of digestion can be assimilated, it has to pass through and be transformed by the liver. Sugar, fat, more or less disintegrated albumins, uric compounds—the liver intervenes to fasten and transform all these elements brought to it in the portal circulation. There can be no assimilation of the food digested elsewhere, unless the liver is doing its work. The liver may be able to take care of all but some one substance, and the defective functioning in respect to this one substance may be the cause of certain nutritional diseases: gout, diabetes or lithiasis. Any substance that passes through the liver without undergoing the normal transformations emerges to circulate as an abnormal, even toxic element, liable to entail severe damage in time. The blood entering and the blood leaving the liver shows remarkable difference. A dog injected by the vein with blood from the portal vein of a fasting dog bears it without harm, but it shows signs of toxic action when the blood is taken from a digesting dog, that is, taken before imperfectly digested protein or other substances in the portal vein have had a chance to be arrested and transformed by the liver. Chauffard and Brodin have had analogous experiences with uric compounds. The phosphotungstic reagent applied to blood from the portal vein and from the hepatic vein shows a notable difference between the amount of uric compounds found in the two.

The Cerebrospinal Fluid.—Mestrezat marshals the evidence in favor of the choroid plexus being the source of the cerebrospinal fluid, and declares that the testimony to date is not very convincing. More probably the pia modifies the composition of the cerebrospinal fluid like any other serous membrane. The connection is so close between this fluid and the venous circulation that he thinks we can assume that the cerebrospinal pressure conforms to the venous pressure. There does not seem to be any independent circulation of the cerebrospinal fluid, and the composition of this fluid can be calculated solely from the dialyzable elements of the blood plasma. It does not have the characteristics of a secretion. Horse serum dialyzed through collodion yields a fluid exactly like cerebrospinal fluid, as also the contents that accumulate in a collodion sac in a dog's abdomen, and the white bile found in a totally obstructed gallbladder. In short, the cerebrospinal fluid is a natural dialysate, neither a secretion nor an ordinary transudate.

The Leukocyte.—Mauriac exclaims that the blood is so sensitive to all changes, without and within, that its formula varies with every instant. Only by series of blood counts can we obtain oversight of conditions. The leukocyte, in fact, is an actual circulating gland, a secreter and carrier of ferments. Alive, it protects by its phagocytosis; dead, it protects by the ferments that escape from it. He adds that because the number of leukocytes normally fluctuate so widely during digestion and from other causes, certain research workers have been misled to ascribe pathologic importance to what are merely physiologic oscillations of the leukocyte curve. Among the numerous ferments secreted by the leukocyte, besides a lipase, protease and peroxidase, there is a glycolytic ferment which Mauriac and Chelle believe is secreted by the elements of the myeloid series. They found it abundant when there were polynuclears present while it could not be detected when there were only lymphocytes in the fluid. This glycolytic power is normal in lymphoid leukemia while it is exaggerated with myeloid leukemia. Mauriac suggests that a lack of this normal glycolytic ferment on the part of the leukocytes may be a factor in certain cases of diabetes. The therapeutic utilization of the leukocytes aims to stimulate their production, to bring vigorous young ones into the circulation, and then by killing them off to open up a source of defensive ferments.

Tests of Movement.—Binet describes the methods and findings with the ergograph and recording apparatus.

Amino-Acids in the Urine.—Mestrezat has materially simplified Sorensen's technic, without apparently detracting from its dependability.

Paris Médical

Sept. 17, 1921, **11**, No. 38

*Chronic Impetigo. F. Balzer.—p. 221.
*Posthemorrhagic Amaurosis. F. Terrien.—p. 229.
Dislocation of Shoulder with Partial Separation of Greater Tuberosity in Boy of 13½. G. Ill.—p. 231.

Chronic Impetigo.—Balzer describes some typical cases of streptococcus dermatosis and gives a long list of local measures that can be applied. Autogenous vaccines, yeast, horse serum, etc., may prove useful adjuvants, but they must be used with caution not to induce too strong a reaction.

Posthemorrhagic Amaurosis.—Terrien comments on the rarity of amaurosis consecutive to the hemorrhages of war wounds. No instance was ever reported in the war of 1871, and only extremely few in the recent war. He encountered only one such case himself, and one other case after an ordinary accident with hemorrhage. The amaurosis developed during the hemorrhage or immediately afterward only in about 10 per cent. each. There was an interval up to forty-eight hours in 20 per cent. and the amaurosis did not develop until after from three to ten days in 40 per cent. Edema of the papilla was noted in some of the cases; the pupils were moderately dilated, with sluggish reactions, and the restriction of the visual field was in the lower half in both his cases. The disturbance is evidently in the retina, from the drop in the blood pressure and the weakness of the heart action, the effect of which is felt in the smallest and most peripheral arteries. The effect is enhanced by the contraction of the small vessels under the action of the vasoconstrictors suffer-

ing from the lack of oxygen. The optic nerve becomes irritated likewise, which is the last straw that breaks down vision. As the quantity of blood is abnormally small, the toxins in it do not get diluted. This explains why traumatic hemorrhage is less liable to be followed by the toxic action than hemorrhages from constitutional causes, with their long continued toxic action. Another factor is suggested by the location of the retinal arteries and the position of the head. This causes the ischemia to be more pronounced in the higher arteries, and this explains the cutting off of the lower half of the visual field.

Presse Médicale, Paris

Sept. 28, 1921, **29**, No. 78

*The Colloidal Benzoin Reaction. G. Guillain, G. Laroche and P. Lechelle.—p. 773.
*Sterilization of Needles for Venesection. P. P. Lévy.—p. 777.
Arsenicals in Certain Lung Diseases. F. Nidergang.—p. 778.

Colloidal Benzoin Reaction. — Guillain, Laroche and Lechelle state that further experience has confirmed the advantages of their colloidal benzoin technic as simpler than the colloidal gold test, while the findings are dependable and constant. They parallel the Wassermann reaction in neurosyphilis, as a rule, and seem to be particularly instructive in the acute and subacute cases. When the findings varied from those with the Wassermann test in nonsyphilitic diseases, if there was any discrepancy it was always the Wassermann that was at fault. The reagent is a suspension of 1 gm. of benzoin resin in 10 c.c. of alcohol, set aside for two days, using only the decanted fluid. They bring the whole subject of colloidal hemolytic tests down to date.

Sterilization of Puncture Needles.—Lévy advises to use for venesection a steel needle sterilized by leaving it for an hour in chloroform containing 3 per cent. paraffin. He says that the paraffin keeps the blood from sticking and the needle from rusting, while the chloroform sterilizes it effectually without affecting the temper, so that very fine needles can be used.

Progrès Médical, Paris

July 30, 1921, **36**, No. 31

*Meningitis in Adults. L. Lortat-Jacob and R. Turpin.—p. 357.
Traumatic Brachial Paralysis. A. Barbé.—p. 357.
*Noninflammatory Adnexitis. Dalché.—p. 359.
Present Status of Pancreas Organotherapy. G. Faroy.—p. 361.

Tuberculous Meningitis in Adults.—A case is described with puzzling symptoms from a focus of softening in the brain, evidently from thrombosis from tuberculous endarteritis. Such lesions frequently modify the clinical picture of tuberculous meningitis in adults.

Noninflammatory Ovarian and Tubal Disturbances. — Dalché discusses what he calls noninflammatory adnexitis. Salpingitis seems unmistakable when the tube enlarges and there are pains in the region, but the complete recovery in two or three weeks under repose, moist heat and sedatives by the rectum, proves that the process was not of infectious origin. The onset is generally abrupt and the subject of the nervous type. This adnexitis may occur on alternate sides; it is usually connected with a menstrual period. Lesage has reported a case in which it developed as the menstrual discharge was arrested by the woman holding her hands in cold water. The tube on palpation felt larger than an egg, but under wet cups all returned to normal in three weeks. In another case a vaginal douche with icy water during a menstrual period was followed by great enlargement of one tube for two weeks. The action of cold on hands or feet or a general chilling may entail this noninflammatory adnexitis, with or without arrest of the menstrual discharge, in the nervously predisposed, the emotionally unstable, the intoxicated. Dalché warns that application of ice to the abdomen may be dangerous during a menstrual period and for five or six days beforehand. It is liable to derange ovulation, and may entail disturbances, ranging from follicular hemorrhage to "ovarian apoplexy." Trauma, even remote from the abdomen, may by reflex action induce this congestion in the tubes, as also disease in the viscera or elsewhere. He warns further that this noninflammatory adnexitis may develop during the honeymoon; a nuptial adnexitis is not always of infectious origin. This adnexitis differs from an infectious process in that the small mass is movable and can be separated from the uterus as long as there is no infection. Evidences of ovarian insufficiency become apparent, and if the congestion is very intense, hematosalpinx may develop. Hot sitz baths may be useful, and other measures to relieve congestion and soothe the nervous system. Dalché keeps the patient absolutely quiet in bed, as long as possible, and warns against cold, fatigue and constipation.

Aug. 6, 1921, **36**, No. 32

The Physiologic Post Partum. H. Vignes.—p. 369.
*Spread to Medulla of Toxins and Ferments in Stomach. M. Loeper, M. Debray and J. Forestier.—p. 372.
General Principles of Prophylaxis of Syphilis. Queyrat.—p. 373.
Case of Homicidal Oniric Alcoholism. H. Damaye.—p. 375.

Spread to the Medulla of Toxins in the Stomach.—Loeper and his co-workers established that certain toxins and ferments in the stomach spread by way of the pneumogastric nerve, and they here present evidence that they can thus find their way up into the medulla oblongata. Experiments on dogs with tetanus toxin and formaldehyd gave positive results when the pylorus was tied off and the gastric mucosa eroded; otherwise not. But pepsin ascended in the nerve and tissues to the medulla when the stomach was normal as well as when it was eroded.

Schweizerische medizinische Wochenschrift, Basel

Sept. 1, 1921, **51**, No. 35

*Workmen's Compensation for Loss of One Eye. Siegrist.—p. 801.
Apparatus to Induce Pneumothorax. H. Frey.—p. 806.
Mechanism of Oniric Delirium. A. Schlesinger.—p. 809.
*Congenital Hyperplasia of Thymus Metamere. IV. M. E. Settelen.—p. 811.

Sept. 15, 1921, **51**, No. 37

Kidney Disease in the Pregnant. P. Hüssy.—p. 845. Cont'd.
Spontaneous Obstetric Laceration of Perineum. D. Eberle.—p. 852.
Asphyxia from Aspiration of Scrap of Placenta. J. Nadler.—p. 854.
Prolapse of Placenta Praevia. J. Nadler.—p. 854.
Spontaneous Sudden Death. J. Thorner.—p. 855. Conc'n.

Workmen's Compensation for Loss of One Eye.—The Swiss social insurance has been in the habit of allowing 10 per cent. compensation for the loss of an eye for the mutilation, with an additional 10 to 23½ per cent. for the incapacity, and nothing more. This has lately been changed to 10 per cent. for the mutilation and nothing more unless vision is lost in the other eye. If this occurs from an insured mishap, the workman receives 100 per cent.; if from sickness or an uninsured accident, he receives 50 per cent. If vision is not totally lost, the percentage is modified to correspond. Siegrist discusses these regulations. The Swiss Ophthalmologic Society appointed a committee to study the matter, and adopted resolutions approving the new regulations but demanding a higher rate for the mutilation, 20 or 25 per cent. according as the eye had been enucleated or not. The society also urged that opportunity for revision be allowed at any time.

Congenital Hyperplasia of Fourth Thymus Metamere.—Settelen found in two cadavers of new-born infants two oval bodies on the back of the thyroid which resembled parathyroids. The microscope revealed that they were exceptionally large thymus metameres. They were the only cases of the kind ever found at Basel although special attention is paid there to the thyroid and thymus.

Pediatria, Naples

Sept. 1, 1921, **29**, No. 17

*Mechanism of Vaccine Therapy. L. Auricchio and G. Jemma.—p. 777.
Blue Spot in Children of Messina. F. Lo Presti Seminerio.—p. 789.
*Shoulder Sign of Tuberculous Meningitis. S. Tronconi.—p. 802.

Mechanism of Action of Vaccines.—Auricchio and Jemma were not satisfied with any of the theories advanced to explain the action of vaccines, and have been studying the behavior of the blood during the shock from injection of antityphoid vaccine. The subjects were five children at the tenth to fifteenth day of typhoid fever. During the first phase of the reaction the temperature drops and the pulse becomes more rapid, while the leukolytic power of the serum increases, and the number of both red and white corpuscles declines. This phase is followed by hyperpyrexia, and with this the number of blood corpuscles rapidly increases, surpassing the previous figure, with numerous young forms of

both red and white corpuscles while the leukolytic power of the serum declines. After subsidence of the vaccine reaction, these changes in the leukocyte formula persist.

The Binda Shoulder Sign of Tuberculous Meningitis.—Tronconi's experience has confirmed the value of Binda's sign for the early diagnosis of tuberculous meningitis, as he shows by a number of case histories from extensive application of the test to sick and well. The sign is the sudden movement of the shoulder when the head is passively turned toward the other side. He places his hand on the patient's head and turns it slowly and gradually from side to side to relax the muscles of the neck. When well relaxed, he twists the head suddenly and abruptly to bring the chin as near as possible to the other shoulder. As this is done, the first shoulder makes a sudden upward and forward movement and persists in this position, resisting attempts to reduce it, until the head is released. In the seven cases of tuberculous meningitis described this sign was constantly positive, and always before a positive response was obtainable with the Kernig, Lasègue, Nizzoli, Oppenheim or contralateral signs. It appeared contemporaneously with the Brudzinski sign. It can scarcely be pathognomonic of tuberculous meningitis, but in his experience it was positive only in the seven tuberculous cases, and was negative in two cases of hydrocephalus and one of cerebellar tumor, in some cases of Weichselbaum bacillus or pneumococcus meningitis, and in a case of serous meningitis with recovery after presenting the Kernig, Oppenheim and Babinski phenomena.

Policlinico, Rome

Sept. 26, 1921, **28**, No. 39

*Syphilitic Disease of Liver. R. Carnelli.—p. 1291.
Present Status of Treatment of Diphtheria. A. Montefusco.—p. 1297.

Differential Diagnosis of Syphilitic Disease of Liver.—Carnelli comments on the difficulty in distinguishing between a syphilitic and malignant process in the liver, hydatid cyst or tumor in the gallbladder or kidney region. The Wassermann reaction may be negative, and even when the abdomen is opened up the diagnosis is not certain. In a case described, the liver tumor had been developing for two years in the man, now 22, without pain or fever, and he denied venereal disease emphatically. There were no symptoms except the mechanical ones from the size of the tumor, and general weakness and worry about his tumor. By exclusion, the diagnosis of sarcoma was made and Carnelli was surprised to find the young man alive a year later. At this time there were processes in some of the long bones and a suppurating lesion in the shoulder. Carnelli then started mercurial treatment as the Wassermann test was positive, and great improvement followed. The case was evidently a congenital syphilitic disease of the liver, developing late. The multiple bone lesions were of the tardy congenital syphilis type. Such have been known to develop as late as the age of 28. The syphilitic disease may affect a liver already pathologic from other causes, and treatment of the syphilis factor may induce marked improvement even though the other factors may continue to operate.

Sept. 1, 1921, **28**, Medical Section No. 9

*The So-Called Cytotoxic Serums. F. Marcora.—p. 365.
*Influence of Pressure on Ferment Action. G. Meldolesi.—p. 390.

Cytotoxic Serums.—After comparing the work of others in this line, Marcora gives the details of experiments on twenty-two dogs besides a number of guinea-pigs. He experimented with a cytotoxic serum obtained from guinea-pigs inoculated in the peritoneum with a suspension of dog brain, liver or kidney substance. The fresh neurotoxic serum did not lose its toxicity when heated to 55 C. for half an hour, but lost it on standing a few days even when kept on ice. No evidence of an anaphylatoxin nor of antibodies for the organs involved could be discovered with precipitation or fixation of complement tests.

Influence of Pressure on Ferment Action.—Meldolesi's research has apparently established that the speed of an enzyme reaction depends on the pressure of the medium in which the action is taking place. The pressure in the living organism is higher than outside, and hence this favors ferment action.

Riforma Medica, Naples

Sept. 3, 1921, **37**, No. 36

Projectile in Bladder; Recovery After Epicystotomy. Alci.—p. 841.
*Chronic Unilateral Pyelonephritis. G. Cavina.—p. 843.
Pigmented Dermofibromatosis. A. Angeli.—p. 845.
*Extrarenal Factors in Picture of Nephritis. A. Ferrannini.—p. 853.

Unilateral Chronic Pyelonephritis.—Sudden and profuse hematuria in Cavina's patient, a woman of 71, was traced to the right kidney, and as the hematuria continued, the kidney was removed on the assumption of cancer. Recovery was prompt and complete. The absence of casts and cells in the urine, of pain, and of any signs of renal insufficiency or of a calculus apparently excluded nephritis, but no trace of a tumor was found. The kidney seemed macroscopically sound but the microscope revealed pronounced and diffuse sclerosis of the glomeruli.

Extrarenal Factors in Clinical Picture of Nephritis.—Ferrannini has long insisted that the elimination of chlorids depends on the interchanges in the tissues of the chlorids as well as on the eliminating power of the kidneys. The chlorids may have a toxic action when retained in that way. In chronic nephritis, the prognosis is graver when the urea nitrogen predominates markedly over the residual nitrogen in the urine, while the proportion keeps within normal range in the blood. The kidneys do not determine this so much as the conditions of osmosis and dialysis throughout the entire organism, and these are liable to be abnormal under the influence of the chronic kidney disease, or as a cause of the latter. Even phlorizin glycosuria does not depend exclusively on the eliminating power of the kidney, but is modified by the conditions of the nutritional exchanges. Test elimination of substances like methylene blue and sodium salicylate that are not constituents of the organism merely lengthen the list of functional tests, already too long. With chronic nephritis, the functioning of other organs should be investigated with special care, the liver, the blood producing system, the nervous system, and the endocrine glands, instead of putting the patient at once on a milk and salt-poor diet. These are liable to entail acid intoxication from undernourishment, and diuretic drugs are liable to tax the already overburdened kidneys.

Brazil-Medico, Rio de Janeiro

Aug. 27, 1921, **2**, No. 7

*Foreign Body in Bronchus. F. Castilho Marcondes.—p. 81.
Chronic Posttraumatic Brain Injuries. W. Sharpe (New York).—p. 84.

Foreign Body in Bronchus.—Castilho succeeded in extracting the seed from the right bronchus of the child of 5 by the natural route, the seed being withdrawn with the tube. It had caused some irritation in the month it had been in the bronchus, and the child's thorax was wrapped in a mustard cataplasm for twenty-four hours after extraction of the foreign body. When this was removed, all traces of the bronchitis had disappeared. The seed did not cast any shadow in roentgen examination. He is convinced that some unsuspected foreign body is responsible for many cases of chronic disease in the lower air passages, and advises exploratory bronchoscopy in puzzling cases even when there is no known history of a foreign body. If the anesthesia is complete, it is a simple maneuver, harder for the operator than for the patient. The latter does not object to a repetition of it. The child in the case reported went to the "movies" at once afterward, while waiting for the train. The foreign body was in the lung proper in 2 of Seno's cases in S. Paulo and was successfully removed by a transpulmonary operation, as also in O. Meiro's case in Rio. Tuffier had 4 deaths in 11 such cases and was unable to find the foreign body in 10; Karewsky in 14 cases found the foreign body only in 2.

Revista de la Asoc. Méd. Argentina, Buenos Aires

July, 1921, **34**, No. 201

*Susceptibility of Thyroidectomized Animals. B. A. Houssay and A. Sordelli.—p. 435.
*Influence of Thyroid on Antibody Formation. Idem.—p. 438.
*Pituitary Treatment of Polyuria. B. A. Houssay and E. Hug.—p. 443.
Experimental Sensitization to Pleural Exudates. A. Bergman.—p. 448.
*Action of Quinidin on the Heart. F. Arrillaga, J. Guglielmetti and C. Waldorp.—p. 454.
*Jaundice in Heart Disease. M. R. Castex and H. D. González.—p. 459.
*Syphilitic Pleuritis and Mastitis. M. R. Castex, R. Pradere and N. Romano.—p. 464.

*Management of Profuse Hematemesis. O. Copello.—p. 471.
*Subacute Venous Septicemia. J. J. Spangenberg.—p. 486.
*Technic for Colectomy. Delfor Del Valle and R. E. Donovan.—p. 499.
Factors Modifying Tuberculosis Mortality in Buenos Aires. C. Alvarez.—p. 514.

Susceptibility to Infection and Intoxication After Thyroidectomy.—The findings were conflicting in the research on rabbits and guinea-pigs reported.

Influence of the Thyroid on Antibody Formation.—Most of the research on rabbits, horses and dogs was inconclusive, but the difference in production of hemolysins and agglutinins between horses before and after thyroidectomy was all in favor of the thyroidectomized animals. The advantage was on the side of the normal controls in the test production of diphtheria antitoxin; the two thyroidectomized horses could not bear the diphtheria toxin.

Action of Pituitary Extract on Cerebral Polyuria.—It was found that injection of pituitary extract increased diuresis in dogs, normal or with cerebral polyuria, while it reduced diuresis in rabbits; did not modify diuresis in normal human subjects, and reduced it in the polyuric. Houssay and Hug recall that true endocrine action is universal; removal of the thyroid reduces metabolism, and removal of the pancreas induces glycosuria in all species. The facts related demonstrate anew the folly of attempting to deduce the function of an organ from the pharmacodynamic action of its extract.

Action of Quinidin on the Heart.—The pharmacologic study of quinidin here reported has confirmed its sedative action on the myocardium, reducing its excitability to a point below that at which auricular fibrillation or extrasystolic arrhythmia is possible. It also inhibits the excitability of the vagus nerve, and checks the heart rate. These three forms of action explain its efficacy in arresting auricular fibrillation, and suggest a possible beneficial action in treatment of vagotonia.

Jaundice in Heart Disease.—Castex and González present evidence that both a mechanical and toxic factor intervene in the production of jaundice with cardiac insufficiency. The defective circulation through the liver soon impairs its functioning, and a vicious circle of mechanical and toxic factors implies a fatal prognosis when frank jaundice develops in the course of heart disease with lost compensation.

Syphilitic Pleurisy.—A case is described of bilateral hemorrhagic pleurisy developing after four years of a mastitis which had entailed a fistula. The discovery of the hemorrhagic nature of the pleural effusion led to suspicion of syphilis, and under specific treatment the chronic mastitis partially retrogressed, and the conditions in the thorax returned to clinically normal. The woman of 43 had alcoholic polyneuritis; the liver was enlarged, and thyroid functioning evidently subnormal.

Hematemesis.—Copello comments on the frequent inability to find the cause of the hemorrhage even when the stomach is opened, and the inefficacy of gastro-enterostomy, or of other minor intervention on the bleeding point, while the shock from the hemorrhage interferes with a radical operation, and the figures show a higher mortality—35 per cent.—from operative intervention. On the other hand, more than 90 per cent. of the hemorrhages become spontaneously arrested, while only from 5 to 10 per cent. succumb under medical treatment alone. With the first hematemesis, the gastric past should be investigated; the stomach kept in absolute repose, and nourishment given in a way not to disturb or distend the stomach, waiting for a day or two before allowing anything by the mouth; ice bag to the epigastrium, proctocleisis at intervals, not enough to raise the blood pressure; 40 c.c. three times a day of a 10 per cent. gelatin serum, and horse serum for its hemostatic action. He adds that emetin has been recently commended as an adjuvant for its hemostatic action, but ergot, epinephrin, morphin and much infusion of saline must be avoided as they raise the blood pressure. Lavage of the stomach with ice water or with hot water has been recommended by some, but he thinks this conflicts with the principle of keeping the stomach in complete repose. Only when the hemorrhage keeps recurring, should operative treatment be considered, ligating or resecting the bleeding vessel, with or without gastro-enterostomy. In the discussion that followed, Pasman emphasized that as the wall of the stomach with an acute ulcer is still sound elsewhere, healing is easier than with chronic ulcer, so that operative treatment is not indicated with an acute ulcer. A posterior gastro-enterostomy is the simplest means to relieve the tension in the stomach. In one case the bleeding was from the coronary. Escudero urged to consider syphilis as the main if not the sole cause of profuse hematemesis. He protests against emetin, saying that its action on the heart might be dangerous; he prefers calcium chlorid, 5 c.c. of a 5 per cent. solution by the vein several times a day.

Subacute Venous Septicemia.—The painter of 44 complained of pains in various joints for two months; this was followed by thrombophlebitis in arms and legs and a hemolytic streptococcus was cultivated from the blood. Aside from the veins, there were no symptoms. The venous system seemed the exclusive seat of the process, but it assumed the phlegmasia form, the hemoptysis and the quadriplegia form in turn.

Technic for Anastomosis After Colectomy.—Del Valle and Donovan give several illustrations showing how best to expose the terminal blood vessels to the segment to be resected, so that injury to them can be avoided, while bringing extensive areas of the serosa safely into contact. They accomplish this by working a grooved sound perpendicularly down to the bowel between the layers of the mesentery, and slitting the upper layer of the mesentery on top of the sound to avoid injury of the vessels. The sound is then worked into the mesentery parallel to and close to the bowel, thus at right angles to its first position, and the upper layer is slit along it here. This leaves a triangular flap on each side, and these are turned back, opening up the network of blood vessels in plain sight. This procedure is repeated on the back of the mesentery, and the four triangular flaps thus formed are utilized to wrap up the suture, thus providing a double reenforcing layer of peritoneum.

Semana Médica, Buenos Aires

Aug. 11, 1921, **28,** No. 32

*Teaching of Obstetrics. J. B. González.—p. 161.
Treatment of Pulmonary Tuberculosis. J. S. Picado.—p. 169.
Monster from Inherited Syphilis. J. R. Rios and L. Martinez Bisso.—p. 175.
Influenza in Villa Urquiza. C. Rossi Belgrano.—p. 183.
Tachycardia and Low Pressure in Influenza. R. Rivas Jordán.—p. 185.

The Teaching of Obstetrics.—González criticizes the present system of the course in obstetrics, and outlines what it should be.

Aug. 25, 1921, **28,** No. 34

*Experimental Emotion. A. M. Sierra.—p. 225.
Case of Lethargic Encephalitis. G. Segura.—p. 232.
*Abdominal Sympathetic Syndromes. C. A. Castaño.—p. 235.
*Deep Roentgen Ray Therapy. R. Espinola.—p. 240.
The Right of Application of Treatment on Scientific Basis in Hospitals. R. A. Bruno and G. F. Lucas.—p. 246.
Physical Training in Colleges and the Army. C. Trejo.—p. 247.

Experimental Emotion.—Sierra comments on the instructive phenomena that follow injection of epinephrin in certain persons. Not only the physical phenomena of intense emotion may follow, the subject growing pale and trembling, panting, the pulse becoming accelerated and the pupils dilated, the blood pressure dropping, with albumin in the urine, and the mucous membranes feeling dry—not only this train of physical phenomena follow, but Marañón has noted the psychic phenomena of emotion accompanying the positive response to the epinephrin test. We thus have a means of inducing experimental emotion in certain subjects, and Sierra has obtained a positive response in many persons inclined to asthma, in others with manic-depressive psychosis or essential melancholia; in the catatonic form of dementia praecox; in persons with even latent hyperthyroidism, and in those giving a positive response to the oculocardiac, Goetsch and dermographic tests. Sierra describes three cases to illustrate the principal types, and demonstrate how the peripheral, somatic element blends with the psychic element to form the emotion. It may start either at the periphery or in the cortex. He obtained a positive response to this experimental emotion in 6 of 18 women tested but only in 8 of 75 men.

Abdominal Phenomena from Sympathetic Otonia.—Castaño discusses the abdominal sympathetic syndromes in relation to gynecology. His address was delivered as an interchange

lecture at Montevideo, and merely the bare outline of it is given here.

Deep Roentgen-Ray Treatment.—Espinola gives an illustrated description of two particularly striking cases of multiple tumors in the neck causing suffocation. Both cases were evidently sarcomatous, but the tumors retrogressed in the first after a single deep irradiation; by the eleventh day the woman of 54 considered herself completely cured and has been in good health since. The roentgen treatment had been applied merely for its moral effect, the case having been considered absolutely hopeless. In the second case the multiple sarcomatous bunches covered the area from chin to low on the sternum, and nearly from ear to ear. Three operations had been performed on the mass from time to time without more than transient relief. The structure was that of an alveolar sarcoma, and by the end of the second week after the deep irradiation with ultra-hard rays, the neoplasm had subsided to such an extent that all symptoms had been relieved and there was no further suffocation or pain; morphin was no longer needed, and the aspect of the neck was improved immeasurably.

Deutsche medizinische Wochenschrift, Berlin

Aug. 18, 1921, **47**, No. 33

*Effect of Environment on Disease in Children. Friedjung.—p. 949.
Plaut-Vincent Angina; Incidence Compared with Diphtheria. Gärtner. p. 950.
Combination Sachs-Georgi and Wassermann Test. Rothmann.—p. 952.
Sensitiveness of the Human Organism to Epinephrin. Csépai.—p. 953.
Therapeutics of Epidemic Meningitis. H. Brütt.—p. 954.
Effect of Calcium Chlorid Plus Acacia on Hemorrhage. H. Götting.—p. 955.
Old Tuberculin in Epilepsy. F. Koester.—p. 956.
Dangers of Conduction Anesthesia. L. Drüner.—p. 957.
Diagnosis of Disease of Accessory Sinuses. H. Vogel.—p. 958.
The Universal Emphysema Question. E. Wentzler.—p. 959.
*Size of Heart in Infants. R. Lange and H. Feldmann.—p. 960.
Factor of Emanation in Radioactive Baths. W. Mittenzwey.—p. 961.
Thermopenetration in Gonorrhea. Kyaw.—p. 962.
Pathogenesis of Worm Infection in Man. W. Fischer.—p. 963.
Treatment of Abortion. L. Blumreich.—p. 964.
The International Reciprocity Question. C. Schilling.—p. 965.

Effect of Environment on Disease in Children.—Friedjung emphasizes the importance of the general practitioner who treats children making himself thoroughly familiar with a child's environment, as many pathologic conditions, both physical and mental, are either induced or aggravated by a child's particular surroundings. A better knowledge of the situation—whether the child is an "only child" and therefore overindulged, or is neglected or treated too sternly by one or both parents and therefore morose and depressed—will often open up the way to do some good prophylactic work. A knowledge of the harmful conditions that have led to the pathologic manifestations is often a prerequisite for successful treatment. To be sure, the physician is not usually called until the damage is done. It is quite within the province of physicians to give advice as to a child's mental development.

Size of Heart in Healthy and Ill Infants as Revealed by Fluoroscopy.—Lange and Feldmann examined, by the Altstaedt method, the hearts of 150 infants in the Lübeck Hospital. Their observations led them to the conclusion that every wasting disease in infancy always brought about a diminution, even though only temporary, in the size of the heart.

Deutsche Zeitschrift für Chirurgie, Leipzig

August, 1921, **165**, No. 5-6

*Chyle Cysts. M. Grauhan.—p. 293.
*Fractures That Will Not Heal. M. Kappis.—p. 304.
*Genesis of Sound in Scapula. M. Jastram.—p. 309.
*Goiter Operations. M. Jastram.—p. 320.
*Perineal Testicle. E. Dangschat.—p. 351.
*Simple Ulcer in the Colon. A. Levy.—p. 366.
*Snapping Knee. M. Budde.—p. 376.
*Direct Vein-to-Vein Transfusion. F. Oehlecker.—p. 397.
*Abscess with Carcinoma of Large Intestine. W. Goldschmidt.—p. 419.
*Etiology of Hirschsprung's Disease. F. Goebel.—p. 428.

Chyle Cysts.—An otherwise healthy woman of 36 developed a tumor in the right supraclavicular fossa, with fluctuation. It was movable, and puncture brought a milky fluid which could be only chyle. The cyst was as large as a goose egg, and was easily shelled out except where it was adherent to the jugular vein. The vein was opened and had to be sutured. The woman bore a healthy child five months later, and there has been no sign of recurrence of the cyst since. At the second and third puncture the fluid showed admixture of blood, another argument in favor of operative removal of such cysts without delay. Grauhan theorizes to explain the origin of chyle cysts in general.

Delayed Healing of Fractures.—Kappis expatiates on the difficulty of determining when delayed healing ends and pseudarthrosis begins; the latter requires operative measures which the former does not. In eighteen such cases he immobilized the bone in plaster after it had apparently refused to heal under extension. The repose and relief in the plaster cast allowed healing to proceed smoothly if there was any possibility of healing. In six or eight weeks this can be determined, and the operation for pseudarthrosis done at once if found necessary. With fracture of the humerus, he warns that the weight of the forearm must be taken off from the fractured bone, and a well fitting plaster cast applied in abduction. Splints and bandages are not strong enough to insure immobilization. The plaster cast is advisable also after the pseudarthrosis operation. By giving up a few weeks to this observation in plaster, many an operation for pseudarthrosis can be avoided.

Cracking Sound in Scapular Region.—Jastram found microscopic lesions in the deeper muscles in two operative cases of this kind in which the pains had compelled intervention. The noise was traced in both cases to a small bony prominence at the angle of the scapula. Rubbing against this was evidently the cause of the degenerative process in the adjacent muscles responsible for the pains.

Goiter Operations.—Jastram reviews the experiences with 234 operations for goiter. The mortality was 4.7 per cent. Death was due to pneumonia, tetany, peritonitis or embolism, or to degeneration of the heart. The myodegeneration was in old cases of exophthalmic goiter, and warns that operation should not be deferred in such cases until the heart is injured beyond repair. The experiences related demonstrate further that scopolamin is dangerous in such cases. There was one "thymus death" in the list; if the persisting thymus and root of the tongue had been examined more carefully this might have shown that the goiter was not exclusively responsible for all the symptoms observed. The thymicolymphatic status contraindicates the goiter operation except in case of vital necessity.

Perineal Displacement of Testicles.—Dangschat reports a case, and recalls a family in which grandfather, father and son all presented this anomaly. The ectopic testicle always seemed to be normal in structure and functioning, and caused no disturbance. His patient had healthy children. No instance of cancer in a perineal testicle is known.

Simple Ulcer of the Colon.—Levy knows of only 30 cases of this kind in German literature and adds another to the list. His patient was a young woman in florid health, and no signs of tuberculosis, dysentery or typhoid were found at the operation. It consisted merely of suturing in the ulcer.

Snapping Knee.—A case of loud snapping is described and the cause and remedy discussed.

Technic for Vein-to-Vein Transfusion of Blood.—Oehlecker gives an illustrated description of his method which has never failed him in the 200 cases in which he has applied it.

Abscess Complicating Cancer of Large Intestine.—Goldschmidt shows how the limits of operability can be extended. In 3 cases described the whole mass was resected into sound tissue without opening the complicating abscess.

Origin of Hirschsprung's Disease.—Goebel urges that search should be made for anomalies in the mesentery as the cause of this disease.

Jahrbuch für Kinderheilkunde, Berlin

1921, **95**, No. 5-6

*Exercises in Treatment of Chronic Chorea. P. Karger.—p. 261.
*The Heart in Children. L. Doxiades and R. Hamburger.—p. 276.
*The Hemoclasic Crisis in Infants. E. Schiff and E. Stransky.—p. 286.
*Fermentation in Intestines. II. E. Freudenberg and O. Heller.—p. 314.
*Streptococcus Viridans Endocarditis in Children. J. C. Schippers and C. de Lange (Amsterdam).—p. 332.
*Zinc Chlorid Poisoning. T. v. Csánky (Budapest).—p. 339.

Exercises in Treatment of Chorea.—Karger ascribes the benefit from isolation of a child with severe chorea to the

avoidance by this means of the depression which the child experiences when it realizes its inability to do properly the things which others are doing. It reacts to this depression by crying. This burst of tears, on what seem to be such slight causes, reveals the emotional instability which is one of the features of chorea. The muscles can be trained to normal functioning by special movements, as he describes. The principle is the same as with Frenkel's exercise treatment of tabes, but this principle has to be applied very differently to children and to adults. With a child, the aim it to exercise a certain muscle, while excluding others, and keep the child's interest aroused and stop at the first sign of incipient fatigue. The movements have to be made into a kind of game. Disturbances in speech are sometimes due to incoordination in the movement of the tongue; a good exercise to combat this is to let the child suck on a piece of candy held in front of its face and moved about. This "game" is great sport for the child and is excellent exercise for the tongue. If due to disturbance in respiration, this can be combated by speaking short syllables slowly, drawing breath between the syllables, and getting the child to imitate this. In exercising the hand, he lets the upper arm lie on the bed and raises the forearm passively, holding it by the wrist, and then has the child squeeze his other hand. By this means the only part exercised is the fingers. At the same time, spontaneous and associated movements in other parts of the body are mechanically suppressed without calling the child's attention to this. Special stress must be laid in doing everything very slowly; this warning, "Slowly" is a very important factor in the treatment. He gave no drugs during this exercise treatment of chorea. Among the cases thus treated were three of recurring chorea; it was the third recurrence in one case and it yielded promptly to this treatment. In another case the chorea was of three years' standing and was cured in three weeks with this treatment. It takes from three to five weeks. Three of the children came as out-patients for treatment, and isolation was not possible; the treatment failed in two of the cases. The parents of the other child carried on the course of exercises at home in the intervals, and the child was cured in three weeks.

The Heart in Children.—Doxiades and Hamburger found in the course of research for another purpose that the electrocardiogram in infants differs materially in a special way from that in adults, as they show by typical examples. They noted also a tendency to bradycardia during nutritional upset, and they think this is probably an economical device to spare the system unnecessary demands. They were impressed with the frequency of a constitutional anomaly of the autonomic nervous system, congenital or acquired, an instability of the vagus innervation. The autonomic system is overexcitable, and such children respond with chemical, nervous and mechanical reactions to ordinary happenings which do not affect children with a stable vagus system. It is possible that these vagolabile children may be candidates for vegetative neuroses in later life, but they did not all present symptoms although they responded with a pronounced reaction to the Czermak, Erben and Aschner tests, with slowing of the pulse on pressure of the vagus in the neck, on pressure of the eyeballs, and on squatting down. In a typical case described, the girl of 12 had been a bed wetter for the last four years, but had no other complaints. In this and other cases administration of atropin cured all the disturbances at once. Calcium was effectual also but not so promptly or so pronounced. Whether the vagus system alone or the whole of the vegetative nervous system is abnormally irritable is still a question. In the girl mentioned, pressure on the eyeballs arrested the heart action completely for six or eight seconds, as can be seen in the electrocardiogram they reproduce. Another phenomenon to which they call attention is the ventricular extrasystoles in children of about 12 which they ascribe to an overexcitability of the myocardium in neuropathic conditions. It is not the expression of organic disease in these cases, and hence the aim should be to strengthen the heart, not to spare it effort. If a child with these extrasystoles is regarded as having actual heart disease, and the physician orders him to keep quiet and avoid exercise, the extrasystoles are liable to persist indefinitely. In such cases the child should be given physical training and gymnastic exercises, with calcium chlorid. Under this the extrasystoles will vanish in a week or two. Repeated reexamination of the children later confirmed the benefit from the recalling of the prohibition of physical exercise.

The Hemoclasic Crisis in Infants.—Schiff and Stransky applied to infants Widal's test hemoclasic crisis, that is, the leukopenia alleged to follow ingestion of milk when the liver is substandard. They obtained the surprising results of a positive response in all the infants, both the healthy and those with possible liver derangement. The only exceptions were in three prematurely born infants in whom the leukocyte count rose instead of dropping. They repeated the tests, using various other substances instead of milk. By this means they determined that the amino-acids and products of digestion of albumin by trypsin always induced leukocytosis, while urea, glycerin and saline had no effect either way. Leukopenia followed ingestion of human or cow's milk, meat, pure peptone, carbohydrates, cod liver oil, and horse serum subcutaneously. The hemoclasic crisis is thus not specific for albumin, and the liver is not exclusively responsible for it. It seems to be in infants the physiologic reaction to ingestion of food, in direct contrast to the physiologic reaction in adults. They are now testing older children, trying to determine at what age the reaction veers to the opposite, if Widal's statements are confirmed by others.

Fermentation in the Intestines.—In this second communication research is reported on the influence of albumin and calcium on fermentation in infants.

Endocarditis in Children.—Schippers and De Lange report two cases in which *Streptococcus viridans* was cultivated from the blood of two young children. The clinical picture was that of slow endocarditis in the boy and of malignant endocarditis in the girl, fatal in three months. There was a history of acute rheumatism in the boy, over a year before.

Zinc Chlorid Poisoning.—The girl of 2 drank a spoonful (5 gm.) of a 50 per cent. solution of zinc chlorid ordered for the mother's endometritis. The stomach was found shrunken, shriveled, and its walls like leather, but the child has been rosy and in good condition during the four months since the gastro-enterostomy. The poison had been taken just after a meal, with the stomach full, and the child vomited at once, which explained the comparatively favorable outcome.

Medizinische Klinik, Berlin

July 31, 1921, **17**, No. 31

*Regulation of Sugar Content of the Blood. L. Pollak.—p. 925.
*Auto-Urine Test for Tuberculosis. M. Weisz.—p. 930.
*Functioning of Cystic Kidneys. H. Zondek.—p. 931.
*Enterostomy in Ileus and Peritonitis. W. Wortmann.—p. 932.
Half Whey-Buttermilk for Infant Feeding. Landau.—p. 938.
*Helminthiasis. R. Glück.—p. 938.
Alveolar Atrophy and Alveolar Pyorrhea. B. Gottlieb.—p. 939.
*Simplified Serologic Test for Syphilis. H. Dold.—p. 940.
Treatment of Leukorrhea. Benthin.—p. 942. Conc'n No. 32, p. 971.

Regulation of the Sugar Content of the Blood.—Pollak gives a comprehensive summary of all that we know at present in regard to the apparatus which regulates and keeps the sugar content of the blood at such a constant level. It does not seem to be dependent altogether on the nervous system, as the sugar content of the blood tends to return to normal even after the nerves have been disconnected from the organs involved. He argues that pancreas diabetes is not the result of disturbance in carbohydrate metabolism so much as of disturbance in the functioning of the apparatus regulating the sugar content of the blood. This can be objectively demonstrated by the accelerated mobilization of glycogen in the liver. The sugar-producing process in the liver proceeds unchecked by the normal inhibiting influence of the physiologic blood sugar-regulating mechanism, as he explains.

The Auto-Urine Test.—Weisz applied to tuberculosis the method of fractional analysis which he has worked out on urine, precipitating with lead acetate and then following with sodium phosphate. His tests failed to disclose any specific antigen in tuberculous urine corresponding to the antigen like that in tuberculin. Hence he concludes that the Wildbolz auto-urine reaction cannot serve to distinguish between active and latent tuberculous processes.

Cystic Kidney.—Zondek describes a case of cystic kidney in a woman of 45 in which the function of the kidney was suffer-

ing as with pronounced contracted kidney. Although the blood pressure was very high, the heart showed only slight dilatation. As the condition was of several years' standing, the case testifies that a high blood pressure is not enough, alone, to induce extreme hypertrophy of the heart. This close resemblance if not identity between the clinical pictures of cystic kidney and contracted kidney shows that a mechanical restriction of the kidney tissue is enough for each, without any infectious element. The patient's father had had kidney disease, and had died after voiding black urine for a week, and one brother has had the left cystic kidney removed.

Enterostomy in Treatment of Ileus and Peritonitis.—Wortmann reports a death rate of 33.3 per cent. in 135 cases of mechanical obstruction of the small intestine, and of 27 per cent. in 37 cases of obstruction from inflammatory processes. In 35 of the very gravest cases enterostomy was done and only 34.3 per cent. died, while 36.4 succumbed of 11 treated with puncture alone. Nineteen years of experience have convinced him of the importance of enterostomy in mechanical obstruction of the bowel, especially early in peritonitis as the paralyzed and adherent loops get kinked. The normal bowel would soon straighten out the kink, and this was accomplished in five cases by several days of high enemas, lavage of the stomach, changes of position, superheated air, physostigmin, etc. But if these fail, enterostomy should follow at once. A laparotomy makes too much demand on the weakened system, and kinks may form again when corrected, or the peritonitis may flare up anew. By relieving the bowel of gases and feces, the circulation gets a chance to improve and the bowel to regain tone. An upper loop of the ileum is best for the purpose; he inserts a catheter through an opening barely large enough to hold it. The catheter or tube is sutured to the bowel, the point where the opening has been made is pushed in, and Lembert sutures applied to make a kind of Witzel fistula. The loop is then reduced and four threads are passed through bowel and peritoneum close to the enterostomy, the ends left long. The peritoneum and fascia are then sutured, after which the long threads are tied. In this way there is no danger of the threads pulling through. A lumen of 1 or 2 mm. is ample to release the thin feces.

Helminthiasis Inducing Colic.—The sudden colic in the woman of 45 in the midst of health, with pain on pressure of the sternum, was accepted as gallstone colic or possibly tabetic crises. Morphin was given and vomiting followed. An ascaris was found in the vomit, and under chenopodium over 36 ascarids were passed at once. There were no further disturbances. Glock assumes that one of the helminths must have got into a bile duct, thus setting up the clinical picture of gallstone colic.

Simplified Test for Syphilis.—Dold does not wait for flocculation to occur, as in the Sachs-Georgi and Meinicke tests, but gages the reaction by the turbid aspect of the fluid. This can be estimated in an hour or two, but he waits for four hours. The response harmonized remarkably with the Sachs-Georgi reaction in his 400 tests. He uses 2 c.c. of the usual syphilitic extracts (cholesterinized), diluted 1:10, and adds 0.4 c.c. of the serum to be tested; with alternating control tubes with known positive and known negative serum reactions for two thirds of the set, as he describes.

Münchener medizinische Wochenschrift, Munich

Aug. 12, 1921, **68**, No. 32

Effects of Postoperative Irradiation of Carcinoma of Breast. Anschütz and Hellmann.—p. 1005.
Colorimetric Tests for Epinephrin in Suprarenal Gland and Uric Acid in the Blood. W. Autenrieth and H. Quantmeyer.—p. 1007.
High Blood Pressure. H. Full.—p. 1009.
Formation of Types of Pneumococci. Hintze and Peter.—p. 1011.
Terminology with Respect to Arch of the Aorta. Kreuzfuchs.—p. 1011.
*Predisposition to Disease. A. Theilhaber.—p. 1013.
Evaluation of the Pandy Test. E. Aschenheim.—p. 1015.
Rhythmic Twitching of Muscles During Sleep, Following Epidemic Encephalitis. Thomas.—p. 1015.
*Bretschneider's Alternating Respiration Procedure. Koch.—p. 1016.
Remarks on Familial Syphilis. G. Stümpke.—p. 1016.
Establishment of Arsphenamin Dosage. W. Brock.—p. 1017.
Useful Plaster-of-Paris Splints. O. Rochelt.—p. 1018.
Operations to Correct Rachitic Leg Curvatures. Stracker.—p. 1020.
Index for Height and Weight in Age Groups. J. Kaup.—p. 1021. Begun No. 31, p. 976.
Remarks on the After-Care of Wounds. A. Krecke.—p. 1024.

The Predisposition to Disease.—Theilhaber in this preliminary communication calls attention to the extreme importance of the conditions in the region which invite disease to settle there. Long before cancer or other disease locates at a given point there must have been the development of predisposing conditions. In healthy pieces of tissue taken from organs that had been removed on account of cancer, he found regularly, not only in these pieces of tissue but also in the connective tissue in the vicinity of these organs, a marked decrease of round cells and of fixed cells in the connective tissue; in addition, extensive endarteritic processes, stenosis and obliteration of blood vessels at numerous points; frequently also "benign" misplaced epithelium. Study of these changes shows always impairment of the blood supply as the main primary local disturbance, but this may be secondary to atrophic conditions in the spleen, thymus, lymph glands, or blood producing apparatus. His research has been devoted in particular to tuberculosis, atheromatosis, chronic joint disease and cancer, and he has been applying treatment in all on this basis of transforming the predisposition in the region, regardless of the disease itself.

He thinks the normal connective tissue has a more important share in protecting against disease than has been realized hitherto, and he aims to promote production of normal connective tissue in the region. Nothing facilitates so rapidly the production of new cells and of new blood vessels as an acute inflammation with its superabundant blood supply. This should be our aim in prevention of recurrence after cancer; he strives to accomplish it by diathermia applied after resection of the cancer. His experimental research shows that diathermia induces inflammation as well as hyperemia. Liebesny has cured a number of cases of cancer in animals by diathermia alone, and Theilhaber has found that it destroys scraps of cancer tissue left after the operation. It is safer than radiotherapy, and larger areas can be exposed. To induce the curative acute inflammation in the lungs, he has started to have silica dust inhaled, in addition to diathermia applied locally and to the spleen and blood producing apparatus. The diathermia has also been applied in this way in treatment of chronic joint disease, also the mercury vapor light, and other means to stimulate blood production. As adjuvant he gives organotherapy (spleen, thymus and lymph glands). In all the above he also applied venesection to stimulate the blood producing organs, not hesitating to draw large amounts, up to 1,200 c.c. Every particle of dust inhaled must induce a little focus of irritation and this strengthens the protecting wall in the lungs; to this he ascribes the different behavior of the child and the adult lung in regard to tuberculous infection. In conclusion he reiterates that not a few of his cancer patients treated on these principles have been free from recurrence for from seven to ten years, including three in whom macroscopic scraps of cancer were left behind in the parametrium. Biologic laws, microscopic research and clinical observation all combine, he says, to confirm that the measures he advises reduce the predisposition to many diseases, reenforce the cellular immunity of the diseased and the threatened tissues, and strengthen the constitution as a whole. But he warns never to forget the principle that while small doses have a stimulating, large doses have a destructive action.

Bretschneider's Alternating Hot and Cold Respiration Procedure.—The procedure consists in allowing the patient alternately to breathe warm, damp air (50 C.) and cold, dry air (5 C.), under low overpressure. This is accomplished by means of a simple apparatus. The principle of the alternating application of heat and cold is not new. We have an analogy in the Scotch douche. Koch has thus treated forty patients in the second or third stage of tuberculosis; there were some critical cases, open and closed tuberculosis, and patients with mild or severe tuberculosis of the larynx. Most of the patients had, in addition to pulmonary tuberculosis, recent or chronic bronchial catarrh and many were suffering from dyspnea. By the alternating respiration procedure marked improvement was brought about in almost all cases. Acute catarrhal manifestations were nearly always favorably influenced, and previously intractable chronic bronchitis cases, that had existed for months and had defied all treatment, were completely cured. The favorable effect

on the dyspnea was often surprising, and in several cases the symptoms were permanently relieved. All this exerted a favorable influence on the tuberculosis. That the results were due solely to the respiration procedure is shown by the fact that during a period in which the apparatus was out of order the respiratory troubles reappeared in certain cases. The procedure is absolutely harmless and patients can be instructed to use the apparatus without assistance.

Wiener klinische Wochenschrift, Vienna

Aug. 11, 1921, **34**, No. 32

Interim Treatment of Sanatorium Candidates. Ladek.—p. 387. Cont'd. Graduate Lecture on Gall-Stone Surgery. H. Lorenz.—p. 389.
*Sequels of Epidemic Encephalitis. W. Spät.—p. 390.
Cases of Suicide with Several Fatal Gunshot Injuries. W. Schwarzacher. —p. 391. Begun No. 31, p. 375.

Sequels to Epidemic Encephalitis.—Spät reports from the industrial hospital of the Prager Eisenindustrie Gesellschaft in Kladno observations on 22 cases of epidemic encephalitis. There were only 3 deaths. The low mortality he explains in part by the mild form, and methods of treatment employed (hypnosis on appearance of motor excitement; systematic lumbar puncture during the lethargic stage). The patients were workmen in the plant, and in many of the mild cases the later developments have been disappointing. In 4 patients, especially, the relapses presented severe complications; one who, the first time, was admitted to the hospital in a raving condition but was quieted by hypnosis and dismissed in fourteen days completely cured, was readmitted a few weeks later in the same raving condition. Under hypnotic influence he soon became quiet and slept quietly the night through. He was found to be suffering from a unilateral paralysis, which gradually receded, partly spontaneously, and partly as the result of electric treatment. In the other 3 cases the sequels did not develop for several months. A boy who after a two-week lethargic stage with high fever, convalesced rapidly, returned to the hospital, several months later, with paralysis of the facial nerve, which after several months' treatment gradually receded but did not disappear entirely. His drowsiness has finally disappeared. When first taken ill, 2 patients presented choreic jerks and a moderate fever. The motor excitement was promptly relieved by hypnosis. Several months later these 2 patients presented the facial expression, body attitude and gait of paralysis agitans, but without the tremor. Headache and weakness in the legs are also complained of. A number of other patients are unable to work on account of persistent headache and sleeplessness. Spät regards these postencephalitic manifestations as partly the result of organic changes in the brain, and partly as of a functional, psychic nature. In many cases all therapeutic measures have proved unavailing.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

July 2, 1921, **2**, No. 1

*Radiotherapy for Cancer. C. Orbaan.—p. 3.
*Glycolytic Property of the Blood. J. Wittop Koning.—p. 19.
*Cancer in the Tropics. C. D. de Langen.—p. 24.
Prevalence of Appendicitis. A. Verschoor.—p. 28.
Uremic Attacks or What? G. F. G. Meerburg.—p. 29.
*Spontaneous Evacuation of Kidney Stones. J. A. H. Hermans.—p. 30.
Girdle of Prominent Blood Vessels on Chest Wall from Coughing. H. Koch.—p. 31.
Historical Exposition at Amsterdam. G. van Rijnberk.—p. 32.
*Van Swieten's Diary. J. J. van der Kleij.—p. 33.
*History of Discovery of Osmosis. F. M. G. de Feyfer.—p. 40.
*Verbrugge's Thesis, 1773. J. van der Hoeven.—p. 47.
Folklore Charms and Formulas. C. Bakker.—p. 52.

Radiotherapy for Cancer of Tonsils.—Orbaan found inoperable cancer in the tonsil in 2.34 per cent. of 725 female patients at the Cancer Research Institute, and in 5.78 per cent. of 565 male patients, during 1915 to 1920. There were thus 44 cases among the 1,290 patients; the ages ranged from 21 to 81. Carcinomas were more frequent in the men and sarcomas in the women. The tonsils were the seat of the carcinoma or sarcoma in 4 and 8 per cent. of the men and in 0.17 and 16 per cent. of the women. In 18 of the 44 cases of carcinoma treated by crossfire roentgen and radium treatment, 11 were more or less improved, and the success was striking in some. One seems to be still clinically cured after an interval of three years. In 4 others no benefit was evident, and one died. Of the total 44, 5 are still living; one over three years later has a suspicion of metastasis in a lung. No benefit was apparent in 10 cases, all men but one. The average minimum survival was for the men 12 and 9 months; for the women 22 and 17 months—a total average of 14 months, but some succumbed to intercurrent disease.

The Glycolytic Power of the Blood.—Koning found a regular decline in the sugar content of specimens of the blood set aside for up to twenty-four hours, and then it began to increase again, the sugar content by the forty-eighth hour sometimes surpassing that of fresh blood. This can only indicate, he says, that two processes are occurring at the same time, one destroying sugar, and the other forming some other substance that reduces copper although it is not split by the glycolytic ferment. The ferment of each process seems to be connected with the blood corpuscles. Koning has had no opportunity to study the blood of diabetics in this respect.

Cancer in the Tropics.—De Langen has compiled the data in regard to cancer at all the Java hospitals for the ten years ending with 1916. They form about 1 per thousand of the total 422,943 persons given hospital treatment. At the central hospital, with 48,834 patients, there were forty-four cancer cases but none in the stomach. Cancer of the mamma is also extremely rare, and no instance was known involving the bile ducts or gallbladder. Primary malignant disease of the liver, cervix, penis and tongue formed the main contingent.

Large Kidney Stones.—Hermans reports the case of the mother of five children who has had three attacks of severe kidney colic followed by spontaneous expulsion by the natural routes of a stone weighing 2,350 mg. with a circumference of 5 cm. and later of one measuring 6.5 cm. and weighing 4,900 mg., all in the course of five days.

Van Swieten's Diary.—Van der Kleij gives a number of extracts from van Swieten's "Constitutiones Epidemicae," published in 1783, which is much like a diary and throws light on medical practice in those days. He relates that Boerhaave always gave a purge after recovery from measles "to clear out the last trace of the enemy." Van Swieten began to use the Fahrenheit thermometer at the bedside in 1728, showing that he kept up well with the procession. Kleij quotes some interesting cases of syphilis, hysteria, puerperal fever, etc., from his records.

The History of Osmosis.—De Feyfer remarks in the course of this historical sketch that Swammerdam (1668) gave the first description of the blood corpuscles as such. He regards William Hewson as the pioneer in osmosis, not J. Müller as is asserted in Neuburger and Pagel's "History of Medicine." Hewson wrote in 1768, "As both a strong solution of neutral salts and a very diluted one alter the shape of the vessels, it is probable that nature has limited the proportions of the water and salts in our blood."

Verbrugge's "De Aneurysmate."—Hoeven describes this thesis, dated June 8, 1773, with which Jacobus Verbrugge obtained his degree at Leiden. It is said to be handsomely illustrated but none of the illustrations are reproduced.

Hospitalstidende, Copenhagen

Aug. 31, 1921, **64**, No. 35

*Otogenous Encephalitis. G. V. T. Borries.—p. 545.

Otogenous Encephalitis.—Borries refers to uncomplicated encephalitis without abscess formation—a rare affection. He has compiled five certain cases, including two in his own experience. The symptoms are those of a brain abscess, but the negative local findings and the unexpectedly favorable course correct the diagnosis. Treatment can be only that for a brain abscess in general, except that no operation on the brain should be attempted. His two cases show how an apparently hopeless case of brain abscess can turn out to be a spontaneously curable encephalitis of this kind. If pus is not found on puncture of the brain, the case need not be regarded as inevitably doomed.

Correction.—In THE JOURNAL, Oct. 29, 1921, page 1451, first column, the article by Labbé and Haguenau should read "Sensitization to Antipyrin," not "Acetylsalicylic Acid." The same correction should be made for the similar abstract on page 1055, April 10, 1920.